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Marketing Research Report No. 790

CHICAGO WHOLESALE FOOD DISTRIBUTION FACILITIES

Agricultural Research Service
UNITED STATES DEPARTMENT OF AGRICULTURE

ACKNOWLEDGMENTS

The authors express their appreciation to the many business firms and individuals, especially the food wholesalers, who furnished much of the data used in this report.

Ira Bach, former commissioner of city planning in Chicago, John Duba, commissioner of planning and development, Larry Reich, former assistant commissioner of city planning, and Jerral Harper, Martin Murphy, and many other staff members of the Department of Planning and Development assisted in organizing and developing many of the aspects of this study and in obtaining information from many sources.

Robert Rogers, Illinois Department of Agriculture, Kenneth Green, Illinois Board of Economic Development, W. F. Lomasay, Illinois Agricultural Extension Service, and R. A. Kelly, University of Illinois, provided consultation and guidance in the development and conduct of this study.

C. E. Cope, Bureau of Commercial Fisheries, U.S. Department of the Interior, provided special assistance in developing the facilities required for fish and seafood products.

Appreciation is expressed to the leaders in the various food industries and members of the various improvement, planning, and industrial commissions and agencies for their assistance in conducting this study, and to the various truck, railroad, and service companies associated with the market.

Special thanks are due the staff of the Illinois Institute of Technology for developing preliminary data used in this report.

Generous assistance and consultation also were provided the authors by the staff and employees of the Marketing Facilities Development Branch and by other members of the Transportation and Facilities Research Division.

Washington, D.C. Issued March 1967

For sale by the Superintendent of Documents, U.S. Government Printing Office,
Washington, D.C. 20402

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CHICAGO WHOLESALE FOOD DISTRIBUTION FACILITIES

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SUMMARY

Construction of a new wholesale food distribution center at one of the four sites evaluated in this study would result in annual savings of $19 to $20.5 million in the cost of handling and marketing the six groups of food products. Rentals required to finance and operate the market would be slightly higher than the operators are paying for the facilities in the present markets. Savings in other costs greatly exceed these increased rentals for most commodity groups.

Detailed studies of the wholesale markets for the six groups--fruits and vegetables; meat; poultry; butter, eggs, and cheese; frozen foods; and groceries--showed that many of the facilities for handling these foods are inadequate, traffic problems and congestion are costly, working conditions are poor, and other serious problems hamper efficient operation. Some of the market areas face urban renewal, few facilities can be expanded properly, and the high cost of renovating and reconditioning present facilities to meet modern and efficient standards prohibits significant improvements in the present locations.

Improvements in the present areas and locations were not considered economically feasible. The only real and efficient solution to many of the problems of wholesale food operators is to develop a complete new food distribution complex, properly located and operated. The facilities should be of a design and arrangement that will not only meet present needs, but anticipate the needs of future years.

Although many sites were investigated as possible locations during the course of this study, only four, Calumet Harbor, Lemont, Midway, and O'Hare, were analyzed in detail. Each of these sites is representative of several, and together they provide an adequate cross section of all that are available.

Total costs of constructing a new market at Calumet Harbor were estimated at $74.1 million, at Lemont $65.0 million, at Midway $84.6 million, and at O'Hare $71.3 million. At each of these locations the market would occupy 435 acres, including room for expansion. In addition, land is available adjacent to the sites for allied interests to develop facilities to complement and service the food distribution center.

Plans to build a new market should include: (1) 949 standard units, 25 feet wide and 100 feet deep, including platforms, in multiple-occupancy buildings, with office space on second floors or mezzanines, depending upon the commodity being marketed; (2) 10 single-occupancy buildings of various sizes to accommodate large operations; (3) 2 buildings for frozen-food operators; (4) direct rail access to all buildings with a house-track capacity of at least 950 rail cars; (5) team tracks for 300 rail cars; (6) space for 8 restaurants of various sizes; (7) 490 offices for market management, brokers, service industries, and others desiring space in the market; (8) paved streets at least 200 feet wide where buildings face each other, and service streets at least 50 feet wide where no parking is allowed; (9) parking areas for at least 4,000 cars and trucks; and (10) expansion areas to permit the construction of additional facilities as needed.

These facilities would serve 565 independent operators that need improved facilities or will need new ones soon because of redevelopment and improvement plans.

The proposed market may be financed and operated in any of several ways on any of the sites by a private corporation

or by an authority of the city of Chicago or of the State of Illinois. Each method has certain advantages.

The annual revenue required to finance and operate the markets, using the most economical method feasible for each site, is as follows: Calumet Harbor $8.0 million, Lemont $6.5 million, Midway $9.1 million, and O'Hare $7.3 million. Average annual rentals required per square foot of total floor space are $1.96, $1.59, $2.20, and $1.76, respectively.

The cost of handling the 3.2 million tons of the six groups of food products could be reduced from an average of $25.04 per ton to $18.87, $19.16, $18.96, and $18.68 at Calumet, Lemont, Midway, and O'Hare, respectively.

Producers, consumers, market employees, wholesale operators, buyers, transportation agencies, and the city would all share in both measurable and nonmeasurable benefits arising from an improved market. The savings or reductions in costs would be reflected all the way through the marketing channels for all the commodities, from the producer to the final consumer.

INTRODUCTION

Wholesale marketing facilities for food and food products that were designed and constructed for handling and marketing the volume and types of products of many years ago do not meet the needs of the producers, wholesalers, and consumers of today. Chicago, like many other cities throughout the country, is being affected by many far-reaching changes in the distribution of food.

Many of the present facilities and markets used in the wholesale handling and marketing of food and food products in the city, such as South Water Market, Fulton Street Market, and the Stockyards area, were built many decades ago. Many were built long before modern motor transportation was available, and a sizable number were built for other uses. Figure 1 shows South Water Market soon after its opening in the late 1920's and as it appeared in 1964 when used by modern motor transport vehicles. As population increased, many facilities used for other purposes were diverted to use by food wholesalers in the city, especially around the established markets.

Improvements in both the quality and quantity of services and in the suitability and adequacy of the facilities for handling foods are necessary to meet present competitive conditions. Increasing population in an economy of plenty invariably leads to a greater total consumption of food.

In the study area[1] there are three major markets, the South Water Market area, the Fulton and Randolph Market area, and the

[1] The study area includes the Standard Metropolitan Statistical areas of Chicago, Ill., and Gary, Hammond, and East Chicago, Ind. These two areas form the Standard Consolidated Metropolitan Statistical area as defined by the U.S. Department of Commerce, Bureau of the Census. In addition to this area, Kendall County, Ill., was also included in the study area. Throughout the remainder of the report, these areas will be included in the references to the study area.

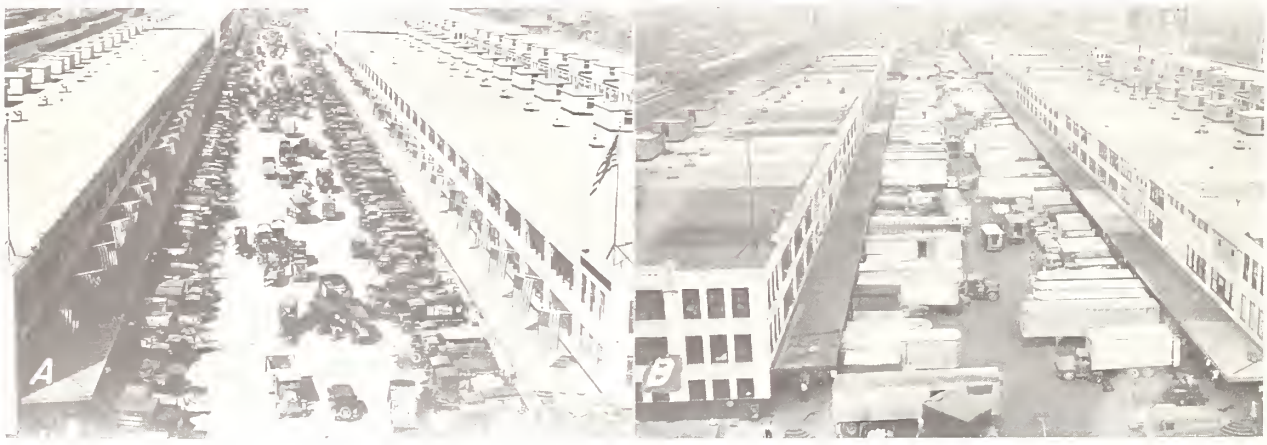

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FIGURE 1.--A, South Water Market in Chicago in the late 1920's was used principally by small trucks and horse-drawn vehicles; B, the market about 40 years later and after an almost universal change in types of transport vehicle.

Stockyards area. Minor wholesale and combination wholesale and retail markets, as well as individual operators wholesaling foods, are located throughout the city and surrounding area, but not in a concentration equal to that in any of the three areas named. This report deals with all the wholesale facilities used in handling food in the study area.

This study was initiated in the winter of 1963 at the request of various city, State, civic, and industry groups in Chicago and Illinois. The Division of Markets of the State Department of Agriculture realized that the wholesale handling and marketing of food in the Chicago area, during its growth and development into a major industry, had incorporated many inefficiencies into the system used. The State Board of Economic Development and the Illinois Agricultural Extension Service likewise were aware that for the area to continue its growth and development, improvements in the wholesale marketing and handling of food were very desirable. The Department of City Planning in Chicago was vitally interested because the wholesale food markets have long been a problem and are an obstacle to developing a sound long-range plan for certain areas in the city and metropolitan area. Other city departments and agencies, as well as the Northeastern Illinois Metropolitan Planning Commission, were aware of some of the difficulties being experienced in the wholesale food trade. Individual wholesale food operators, food trade members, buyers, sellers, service agencies, and other business firms located in, adjacent to, or near the various markets were constantly plagued with problems arising from the wholesale food business. Problems such as inadequate, old, and poorly designed facilities, narrow and congested streets, and lack of parking space, sanitation, and space for expansion and growth have augmented the need for improvements.

As a result of a keen interest expressed by the various food wholesalers, industry groups, individuals, municipal authorities, and others vitally interested in wholesale food facilities, and after thorough discussions between the officials of the U.S. Department of Agriculture, the city of Chicago, the State of Illinois, and other interested groups, this study was initiated. It is aimed at improving the efficiency and quality of marketing facilities used in moving agricultural commodities from the producer to the consumer.

The objectives of this study were:

1. To analyze and evaluate the present wholesale marketing facilities used in Chicago for handling food.
2. To estimate the major costs of handling these products under present conditions with current methods and techniques.
3. To determine the kinds and amounts of facilities needed for efficient wholesaling of food and food products in Chicago.
4. To estimate the costs of construction and the income required for improved marketing facilities for the Chicago metropolitan area.
5. To outline the benefits that might be derived from improved and efficient facilities for handling food.
6. To develop a long-range plan that will incorporate best known and most advanced methods and techniques for the future of the wholesale food handling industry.

This study includes the following groups of wholesale food operators: Fruits and vegetables; meat and meat products; poultry; butter, eggs, and cheese; frozen foods; and groceries. Studies of the facilities for handling fish and seafood were contracted for by the U.S. Department of the Interior. Results of these studies are used to determine the kinds, amounts, and location of facilities that should be included in a complete food center.

Fluid milk plants and the distribution of fresh milk were not included in the study, because the distribution patterns for milk are quite different from those for other commodities. Many of the milk processing plants and distribution and handling facilities are located in the producing areas. Packaging and processing of fluid milk is usually completed before the milk arrives in the city. If it is processed in the city, this is done in reasonably efficient plants that are quite modern, adequately refrigerated, properly designed, and well located.

The study area includes all of Cook, DuPage, Kane, Kendall, Lake, McHenry, and Will Counties in Illinois, and Lake and Porter Counties in Indiana. Kendall County, Ill., was included because it forms an integral part of the food distribution system of the entire area. Figure 2 shows the boundaries of the study area as well as the cities and towns located within the area. It is about 50 miles wide and 100 miles long.

Data used in this report, unless otherwise noted, are for the year 1962. This was the last full year on which information

FIGURE 2.--The area included in this study, showing the approximate locations of the cities and towns within the area.

was available at the time the data were collected on the various aspects of the wholesale food industry. Data were obtained primarily through interviews with wholesale food handlers, railroad officials, representatives of the city of Chicago and various other governmental bodies, and other interested groups and individuals. Primary interviewing to determine the number of operators, movement of products, and costs of movement, as well as certain descriptive material used in this report was accomplished under contract with the Illinois Institute of Technology.

IMPORTANCE OF FOOD WHOLESALING

According to the Bureau of the Census, in 1960 the combined population of the nine-county study area was 6.8 million--6.2 million in Illinois and 0.6 million in Indiana (8).[2] Nearly 62 percent of the population of Illinois and 12 percent of the population of Indiana resided in the study area.

Borgue and Dandekar in their publication on the population of the Chicago Consolidated Metropolitan Statistical Area (this excludes Kendall County, Ill., which in 1960 had 17,500 population) projected the population for the area to 10.3 million in 1990 (1).

According to the U.S. Bureau of the Census, there were 34,733 retail outlets[3] for food in the consolidated statistical area in 1958 (9).

SUPPLIES OF FOOD AND MOVEMENT TO THE MARKETS

Volume

A total of 6,326,793 tons of food commodities in the six groups included in the study were received by all wholesale operators in Chicago during 1962.[4] These products had a wholesale value of almost $3 billion. The total volume handled by all operators was more than this because of transfers and the handling of the same product by more than one operator in the city. The volume of food received is considerably greater than that required to feed the population of the city, as Chicago wholesalers ship products to many surrounding cities and communities such as Milwaukee, South Bend, and downstate Illinois.

Groceries represented almost 40 percent of all products received in the city. Fruits and vegetables accounted for one-fourth of all products received, and meat and meat products for slightly over one-fifth. Poultry, butter, eggs, cheese, and frozen foods made up the remaining 13 percent. Table 1 gives the volumes and relative percentages of products received, by commodity groups.

TABLE 1.--Total direct receipts of 6 food commodities by wholesale operators and percent of each, Chicago, 1962[1]

Commodity group	Direct receipts	
	Tons	Percent
Fruits and vegetables....	1,582,427	25.0
Meat and meat products...	1,411,520	22.3
Poultry.....	168,135	2.7
Butter, eggs, and cheese[2]	455,374	7.2
Frozen food.....	218,355	3.4
Groceries.....	2,490,982	39.4
Total.....	6,326,793	100.0

[1] Direct receipts include all food commodities that originate from outside the city or from points where processed within the city and are handled by operators through wholesale markets in Chicago. This does not include those quantities that are produced or processed within or out of the city and move direct to retail or other outlets.

[2] Includes margarine.

Sources

Chicago wholesale operators receive food products from about every State in the Union and many foreign countries. As the seasons change, the source of supply changes for the perishable commodities. Sources of supply for groceries and other nonperishables are usually about the same throughout the year.

California, Florida, Arizona, and Texas supplied 53.6 percent of the fruits and vegetables to the city. These four States plus Illinois, Michigan, Washington, and North Dakota supplied 74.1 percent of these commodities in 1962, Illinois supplied about 2.8 percent (6).

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[2] Underscored numbers in parentheses refer to items in Literature Cited, p. 89.

[3] Defined as a retail grocery store, delicatessen, retail meat market, restaurant, or other establishment serving food or beverages.

[4] Chicago is used hereinafter to refer to the entire study area described earlier.

Most of the meat and meat products come from the midwestern production areas, especially Iowa, Nebraska, Colorado, and Illinois. Other important suppliers are Indiana, Texas, Ohio, Minnesota, South Dakota, and Kansas.

Processed poultry arrived in Chicago from about three-fourths of the States. The major sources were Georgia, Alabama, Tennessee, and Minnesota. These four States accounted for about two-thirds of the receipts (7). Illinois producers supplied only about 4 percent.

The midwestern States of Iowa, Wisconsin, and Minnesota supplied almost 80 percent of the eggs, Illinois supplied about 13 percent, and the remaining 7 percent came from about 20 other States, some from as far away as California (7).

Groceries and frozen foods came from various shipping and processing points oftentimes far removed from the production area. Many of the items classified as groceries originate at sources other than farms and ranches. Items such as paper goods, notions, beauty aids, household cleansers, and many others are classified under the broad category of groceries because they are handled and marketed in the same channels as food.

Transportation

More than 70 percent of the six food commodities arrived by truck; the remainder came by rail, rail-truck, or piggyback from the production areas. A large part of the rail receipts were team track arrivals that required unloading from the rail cars onto a truck and moving to the wholesale market facilities. Products are sometimes moved direct from rail cars to retail outlets. Other times, the cars may be diverted from an inspection point to other points in the city.

A detailed breakdown of methods of transportation may be seen in table 2.

TABLE 2.--Direct receipts of 6 wholesale food commodities, by type of food and method of transportation, Chicago, 1962

Type of food	Truck[1]		Rail		Rail-truck[2]		Total	
	Tons	Percent of type	Tons	Percent of type	Tons	Percent of type	Tons	Percent of total
Fruits and vegetables	820,782	51.9	[3] 360,008	22.7	401,637	25.4	1,582,427	25.0
Meat and meat products	1,213,954	86.0	73,409	5.2	124,157	8.8	1,411,520	22.3
Poultry	165,343	98.3	136	.1	2,656	1.6	168,135	2.7
Butter, eggs, and cheese	445,881	97.9	4,573	1.0	4,920	1.1	455,374	7.2
Frozen foods	153,147	70.1	57,402	26.3	7,806	3.6	218,355	3.4
Groceries	1,748,541	70.2	726,413	29.2	16,028	.6	2,490,982	39.4
Total	4,547,648	71.9	1,221,941	19.3	557,204	8.8	6,326,793	100.0

[1] Less than 0.5 percent moved by air and boat. These receipts are carried under "truck," as they required trucking from pier or airport to the markets. Includes volumes originating at processors in the Chicago area and trucked to market.

[2] Includes piggyback and team-track receipts that are unloaded and trucked to market facilities.

[3] Auction receipts and sales from team tracks are included in rail receipts.

PRESENT WHOLESALE MARKETS AND FACILITIES

This section of the report describes the major wholesale market areas and the facilities used in handling the various types of food products in Chicago in 1962. The conditions in the various markets, the facilities, number of operators, and allied facilities are discussed.

All wholesale facilities known to be used for handling the six food groups included in this study were visited, and information was obtained on them during the survey. The volume handled, kind of business, amount and type of space, and other pertinent data were obtained from each operator.

South Water Market, Fulton-Randolph, and the Stockyards area are the three major food markets in Chicago. In addition to these, there are several scattered groups of wholesale operators, but not in the concentration of the above three. For purposes of this analysis they are classified as "other city," suburban, and chain warehouses. Other city includes all wholesale operators inside the city of Chicago that are not included in the three major areas.

The suburban classification includes all other wholesale operators in the nine-county area except national chains. There are small concentrations of operators wholesaling food in such areas as the State Street Market, Joliet, Hammond, and Gary, but not in sufficient numbers to warrant special consideration.

Figure 3 shows the locations of the five market areas used in classifying the operators.

At the time of the survey 751 food trade operators, including 4 national chains, were performing wholesaling functions in the nine-county study area. Operators that performed less than 50 percent of their business on a wholesale basis were classified as retailers and are not included in this study. An operator that handled more than one of the six commodities was classified according to the major volume handled. For example, an operator that handled meat and poultry was classified as a meat operator if 50 percent or more of the volume handled was meat. If over 50 percent of the volume handled was poultry, the operator was classified as a poultry operator. This classification was further used for local chainstores and associated or cooperative groups of retailers performing a wholesaling function. Because the largest percentage of volume was groceries, these firms are so classified. The number of operators by market areas and types of products handled is shown in table 3.

South Water Market Area[5]

South Water Market

South Water Market, located at 1200 West and 1500 South, is the major wholesale fruit and vegetable market in the city. Well over 50 percent of all fruit and vegetable wholesalers operated and maintained facilities in this area.

There were 109 wholesalers operating in the South Water Market, which includes only that area bounded by South Racine, W. 14th Place, South Morgan, and the rail tracks of the Chicago and Northwestern Railway on the south. This number includes 90 fruit and vegetable operators, 9 meat operators, and 10 other food wholesalers. In addition, at the time of this survey, three facilities were vacant, two were occupied by other industries, and one was being used for handling and marketing fish and seafood products.

South Water Market was constructed and first occupied in 1925. It replaced the old fruit and vegetable market on South Water Street which at that time was being redeveloped due to bridge and street construction across and near the Chicago River. The market now, as at the time of

[5] South Water Market refers to the six buildings included in the market; the South Water Market area refers to an area about twice the size, immediately surrounding and including South Water Market.

TABLE 3.--Number of wholesale operators, by type of commodity handled and market area, Chicago, 1962

Commodity handled	South Water[1]	Fulton-Randolph	Stockyards	Other city	Suburban	Total all areas
	Number	Number	Number	Number	Number	Number
Fruits and vegetables	90	22	([2])	17	29	158
Meat and meat products	9	91	64	106	62	332
Poultry	2	13	([2])	15	14	44
Butter, eggs, and cheese	3	25	([2])	13	18	59
Frozen foods	([3])	11	([2])	22	19	52
Groceries	5	26	([2])	47	24	102
National chains	([4])	([4])	([4])	([4])	([4])	4
Total	109	188	64	220	166	751

[1] Numbers differ slightly from land use map (fig. 5) because of differences in dates when information was obtained.
[2] Operators in the Stockyards handling commodities other than meat are included in "other city" because of the small number.
[3] No frozen food operators at time of survey in this area.
[4] National chains are not shown by areas to avoid revealing data for individual firms.

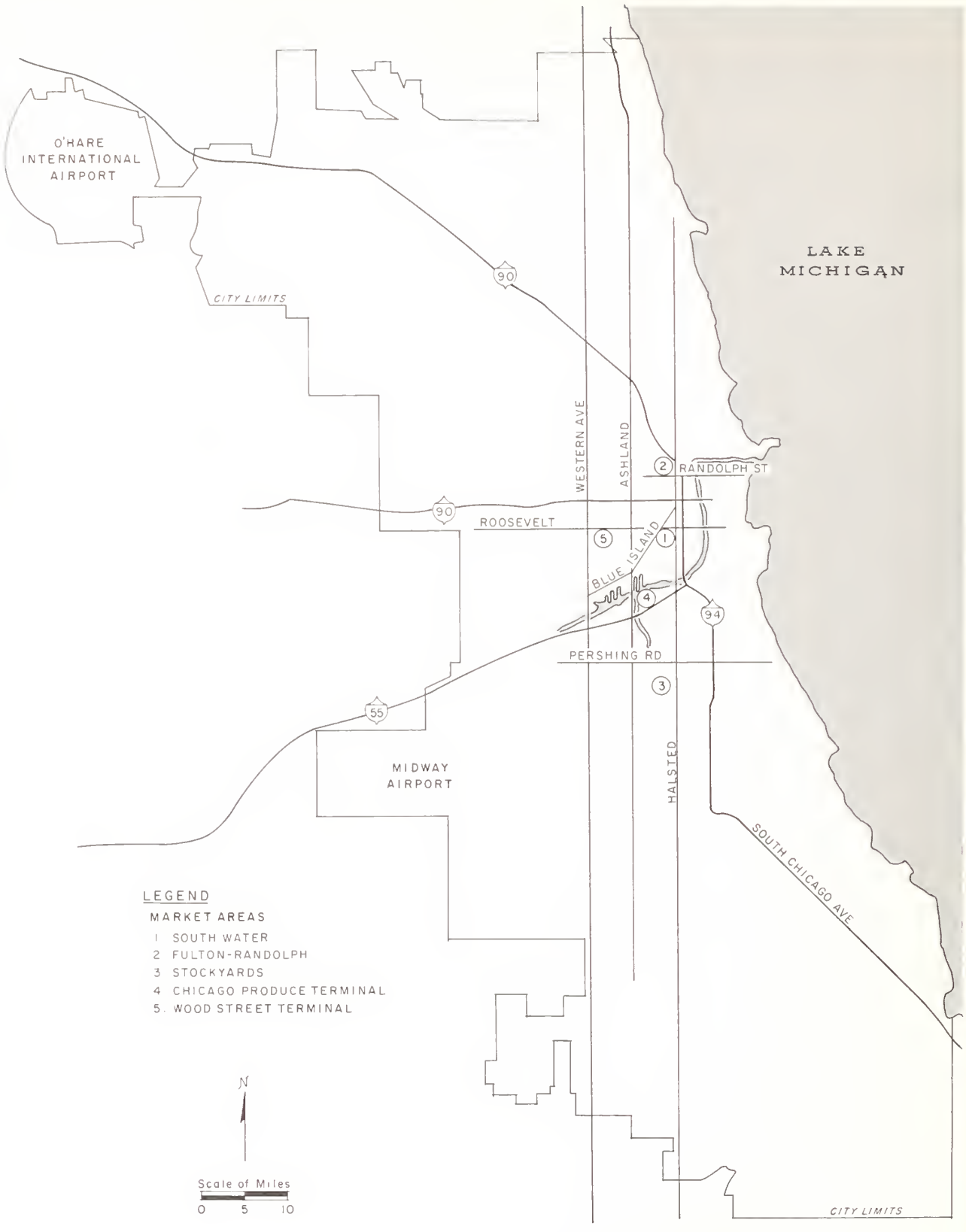

FIGURE 3.--Location of market areas and auxiliary facilities in the study area.

construction, occupies six buildings which range in length from 575 feet to 815 feet. Each building is about 100 feet deep, which includes a covered platform 15 feet wide running the entire length at the front. Very narrow platforms have been constructed at the rear of some of the buildings. There are 166 units 22 to 24 feet wide in the six buildings. Each building has a basement, a first-floor level about 30 inches above the street, and a second and third floor. Each unit has a freight elevator. Figure 4 shows the narrow streets, platforms, and elevators used in transporting merchandise between floors in South Water Market.

As volume increased, the market gradually spread into the surrounding area. At the present time, related market or service activities occupy most of the area between Blue Island Avenue on the west, West 14th Street on the north, South Sangamon on the east, and the Chicago and Northwestern Railway tracks on the south. Much of this area is devoted to parking garages, motor vehicle service stations, and allied industries such as crating firms, bag and packaging material suppliers, and cold storage warehouses. There are some residences in the area.

The area has a number of bars, restaurants, and other service establishments for employees, truckers, and others who come to the area. Land use may be seen in figure 5.

The area north of South Water Market to Roosevelt Road between Halsted Street and Blue Island Avenue is a degenerated, run-down, slum neighborhood. This entire area,

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FIGURE 4.--A, Alley behind one of the buildings on South Water Market. The line of utility poles marks the south edge of the market; B, Elevator in one of the units on the market used to move merchandise to other floors; C, Alley between two rows of buildings on South Water Market. The narrow rear platform is noticeable in the foreground; D, The main thoroughfare showing rail tracks on south side of the market.

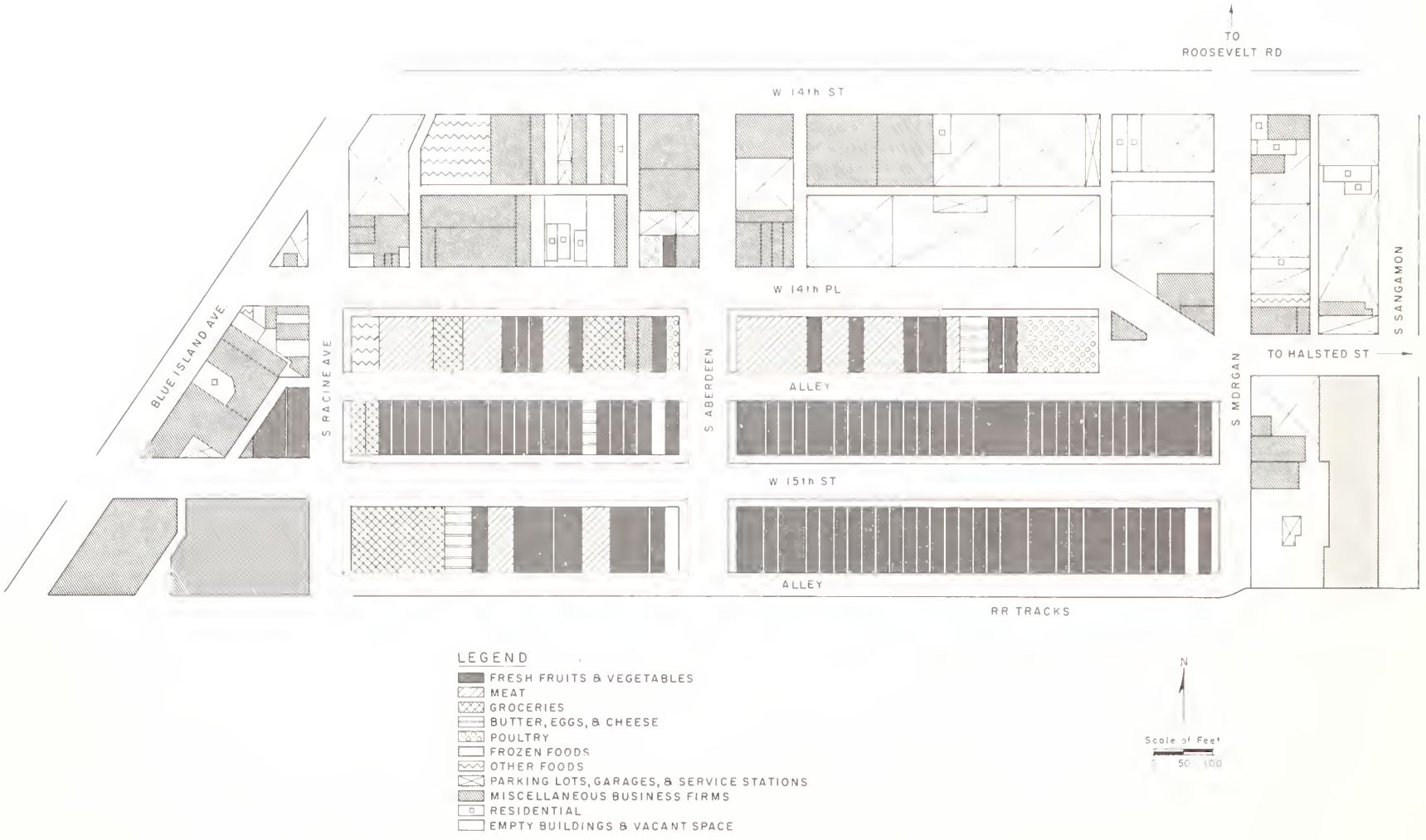


FIGURE 5.--Land use in the South Water Market area, 1962.

including South Water Market and the land east of Halsted Street to Interstate 94 is now an urban renewal project area; the end of these blighting conditions is, therefore, in sight. The area just north of Roosevelt Road has been redeveloped into the Chicago Campus of the University of Illinois. West of the market area considerable redevelopment has occurred and housing occupies a good portion of the area. Few areas in the city of Chicago contain the filth and other undesirable conditions that are rampant in the market area.

The areas immediately adjacent to the market are undergoing change that was brought on by regulating the hours in which incoming merchandise might be unloaded in the market. Because over-the-road trailers cannot enter the market for unloading between midnight and noon, there has been a tremendous increase in the demand for truck parking space. This further aggravated already critical parking situations. As a result, the rundown areas are being cleared and conditioned for parking. Because of this rapidly changing condition, no detailed account of the firms is being made in the area. General land use at the time of the surveys may be examined in figure 5. This has changed rather substantially, but the character of the area remains the same.

The tax values of the land and improvements indicate that the six buildings and the area occupied by them are substantially more valuable than the area around South Water Market. Figure 6 shows the assessed values of land and improvements per square foot.

Although the six buildings that make up the South Water Market are 40 years old, they have been maintained fairly well and are in relatively good shape. The buildings are of concrete and masonry construction with metal canopies and steel fire escapes at the rear of each. Many of the basements contain coolers, but the second and third floor levels generally are not used very extensively except for storage of records, supplies, boxes, and crates. Many firms have their offices on either the second or third floor. There are occasional exceptions where products are stored or processed on these floors. Most of the wholesale facilities are 24 feet wide with an enclosed depth of about 80 feet. Several operators occupy more than one unit. Relatively few remain vacant for extended periods; however, there are almost always some vacancies in the market (3).[6]

Platforms at the rear, where they are available, are largely unusable because the alley between or behind the buildings is so narrow. The platforms at the front are about 30 inches high and, because most vehicle floors are higher than this, devices such as bridge plates, lifts, and other arrangements must be used (fig. 7).

The streets serving the area are narrow and were not designed or constructed to carry the number and load of vehicles using the market. Halsted Street runs about four blocks east of the market at 800 West and is the closest major express street running north and south. Roosevelt Road, four blocks north of the market, is the closest major street running east and west. Halsted Street and Roosevelt Road provide the major accesses to the Interstate Highway system--Dan Ryan, Kennedy, Eisenhower, Stevenson, and Edens expressways. Blue Island Avenue is the western boundary of the market and runs in a southwesterly direction. Within the market area most city streets are 30 to 40 feet wide. However, the main thoroughfare in South Water Market, West 15th Street, is 90 feet wide, and South Aberdeen, the main cross street in the market running north and south, is 70 feet wide. The alleys behind the buildings are 25 to 45 feet wide, depending on the rear platform canopy length and their location within South Water Market. When the alleys are used, as they often are, for loading out merchandise onto small trucks and vehicles, traffic is congested and delays are often encountered in placing the truck for loading.

Public parking areas are not provided in the market, and parking space is vastly inadequate; as a result, valuable tailboard space along the platforms is often used for parking. Numerous public and private parking areas are available just off South Water Market in the area immediately adjacent.

There are no farmers' market facilities in the market. Farmers bringing fruits and vegetables into the market deal directly with the commission merchants on the market.

The hours of operation run from about 4:00 a.m. until noon. On some days the main activity on the market has ceased

[6] In the report published in 1962 by the Department of City Planning, 11 units were vacant. At the time of the survey of this report in 1963, there were only three vacancies.

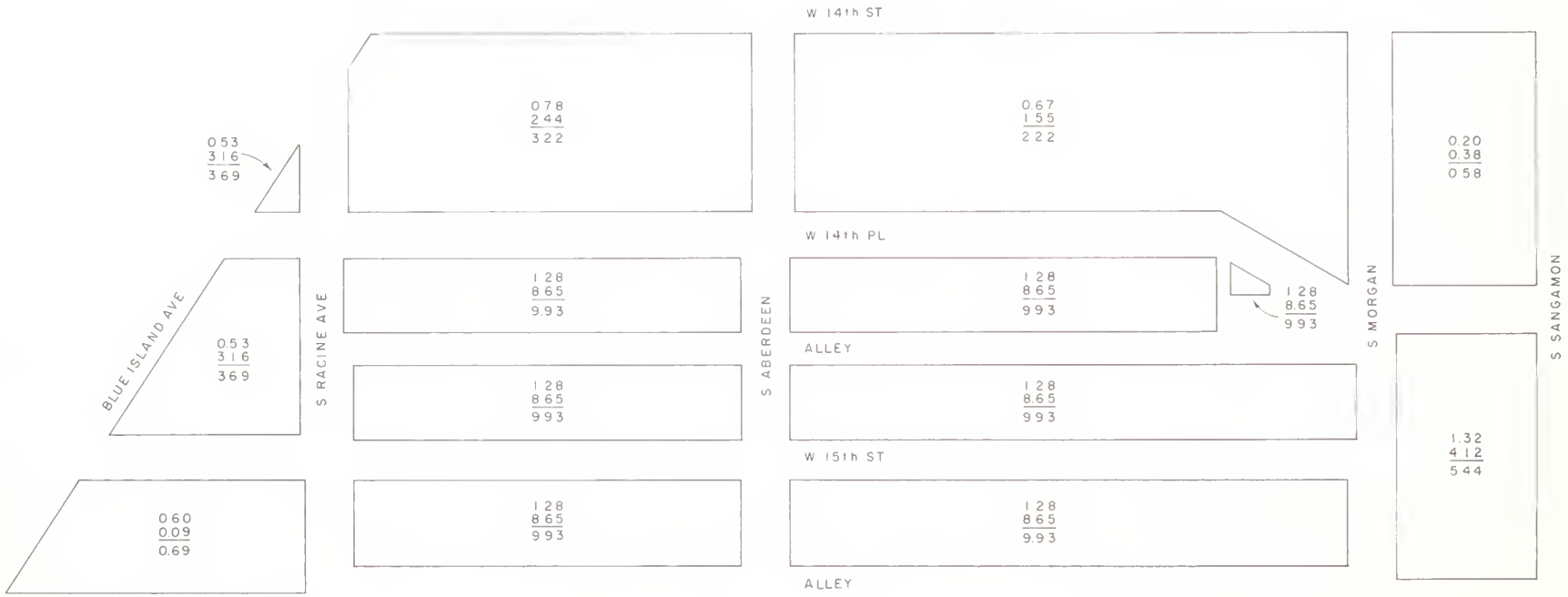


FIGURE 6.--Assessed value of property in the South Water Market area in 1963.

BN-28959

FIGURE 7.--A, Lift being used to load a tub truck from a platform on South Water Market to a motor vehicle; B, a cumbersome arrangement for unloading watermelons from a truck onto the platform on South Water Market.

before 10:00 a.m. The regulation governing the hours of the day in which trucks may unload has served to lengthen the hours of operation, as receiving operations, by regulation, must not start until noon. Truck-to-truck unloading and reloading often causes additional congestion on the streets in the market area. Operations are continually being conducted in the market.

A community or central refrigeration plant supplies brine for use in the refrigeration of coolers and some work areas. The system is operated by the cold storage firm located in the market area.

South Water Market is a private development with the operators either owning or renting the facilities which they occupy. The night watchman service, snow removal, street and lighting systems, as well as sewerage pumping plants are operated by an association of the occupants of the six buildings in the market.

Although the tracks of the Chicago and Northwestern Railway are on the southern boundary of the area, no facilities have direct first-floor rail sidings. The rail tracks are 10 to 15 feet above the level of the market streets. A few operators have tried to make use of the tracks by unloading on the second- and third-floor levels across the alley, but find this a cumbersome and expensive operation. As a result, most operators in the South Water Market area who receive products by rail rely on team tracks at other locations. The two areas used most extensively are the Wood Street Terminal and the Chicago Produce Terminal.

The Chicago Produce Terminal

The Chicago Produce Terminal was constructed jointly by the Atchison, Topeka and Santa Fe and the Illinois Central Railroads in 1925 at a cost of about $12 million. Although the terminal serves these two railroads, it is also open to other carriers.

It is located on a 75-acre tract bounded by the Chicago River, Ashland Avenue, 31 st Street, and Damen Avenue. It is about 1.2 miles from South Water Market and has a capacity of about 2,600 freight cars. The facilities include the fruit auction facilities, team tracks, potato and watermelon yards, inspection facilities, holding and classification yards, and two office buildings for terminal management and operation and for brokers.

The auction facility consists of a building about 800 feet long and 100 feet wide. Rail cars can be placed on each side for unloading; however, under normal operations, rail cars are unloaded on one side and trucks are loaded from the other. Figure 8 shows the interior of the auction, the truck loadout area, the office building used by brokers, and the team track and inspection areas.

The team tracks of the produce terminal provide space for placement of about 675

BN-28960

FIGURE 8.--A, The team track area of the Chicago Produce Terminal showing the inspection area to the right and car placement to the left; B, main office building of the terminal which is used primarily by brokers; C, exterior of the fruit auction building showing the loadout docks; D, interior of the fruit auction building with fruit displayed.

cars at any one time. The tracks are placed in pairs along a 44-foot paved unloading area where rail cars are unloaded onto trucks which deliver mainly to South Water Market and other outlets throughout the city. In addition, certain areas within the terminal are set aside for special activities such as handling watermelons, holding, classification, and diversion to other cities.

The Wood Street Terminal

The Wood Street Terminal was constructed by the Chicago and Northwestern Railway to centralize the handling of incoming receipts of potatoes and onions. Similar to the Chicago Produce Terminal, but somewhat less extensive, it is restricted essentially to the handling of potatoes, onions, and similar vegetables.

The terminal covers approximately 60 acres and is located about 1 mile west of South Water Market on the east side of Western Avenue between 14th Street and 15th Place. It consists of an administration building, restaurant, a covered freight station, team tracks for approximately 550 cars at any one time, and a holding and classification yard for about 1,850 rail cars. The team tracks are laid in pairs and face a 50-foot-wide concrete driveway used for loading and unloading.

Both the Chicago Produce Terminal and the Wood Street Terminal provide public communication systems, lighting, and maintenance of the areas. Figure 9 shows the various facilities on the Wood Street Terminal.

Other terminals and team tracks are used occasionally by the operators in South Water Market, but not as extensively as the Chicago Produce and Wood Street terminals. Others include the Illinois Central Railroad team tracks at Randolph Street, New York Central System tracks west of State Street on Roosevelt Road, the Santa Fe tracks at 22d and State Streets, and the Burlington tracks just south of South Water Market. These facilities serve not only South Water Market, but other markets such as Fulton-Randolph, the Stockyards area, and operators located outside of the specific markets mentioned.

BN-28961

FIGURE 9.--A, Team tracks on the Wood Street Terminal; B, part of the offices and sales facilities in the terminal; C, covered unloading and inspection docks; D terminal restaurant; terminal office building at left.

Fulton-Randolph Market Area[7]

The only wholesale market area in Chicago that approaches a complete food market is the Fulton-Randolph Market area. Neither the Fulton Street area nor the Randolph Street area constitutes a complete market alone, but in combination they form a concentrated area where all types of wholesale food handlers are operating in a sufficient number to provide a variety of services and products to retail outlets.

The area covers about 40 city blocks between North Elizabeth, West Washington, North Halsted, and West Carroll Streets at about 400 North and 800 West. The major wholesale food activity in the market area is along Fulton and Randolph Streets. Numerous operators are scattered throughout the area. A number of operators are located on Lake Street and on the numerous cross streets between Fulton and Randolph.

There were 188 wholesale food operators in this market area in 1962. About half of these were handling meat and meat products. About one-eighth of all operators in this area handled fruits and vegetables, one-eighth handled butter, eggs, and cheese, and one-eighth handled groceries. The remaining one-eighth dealt in frozen foods or dressed poultry products. For the number of operators handling each commodity, see table 3.[8]

Unlike South Water Market, the Fulton-Randolph Market is not a planned development, but rather an area where food wholesaling has been conducted for many years; as the need arose, more facilities were converted from other uses to food wholesaling. Likewise, when other businesses needed additional facilities or expansion, a facility not being used by the wholesale food operators was converted to other uses. As a result, the area is constantly changing. Detailed land use in the area may be seen in figure 10.

[7] Fulton-Randolph Market refers to the market areas on Fulton and Randolph Streets, as well as the adjacent areas. This analysis recognizes one contiguous area with no defined division between the two markets. Any division between the two would be arbitrarily made and would serve no useful purpose in this report.

[8] Fish wholesalers are located on Fulton Street east of Halsted. This area was excluded from this study.

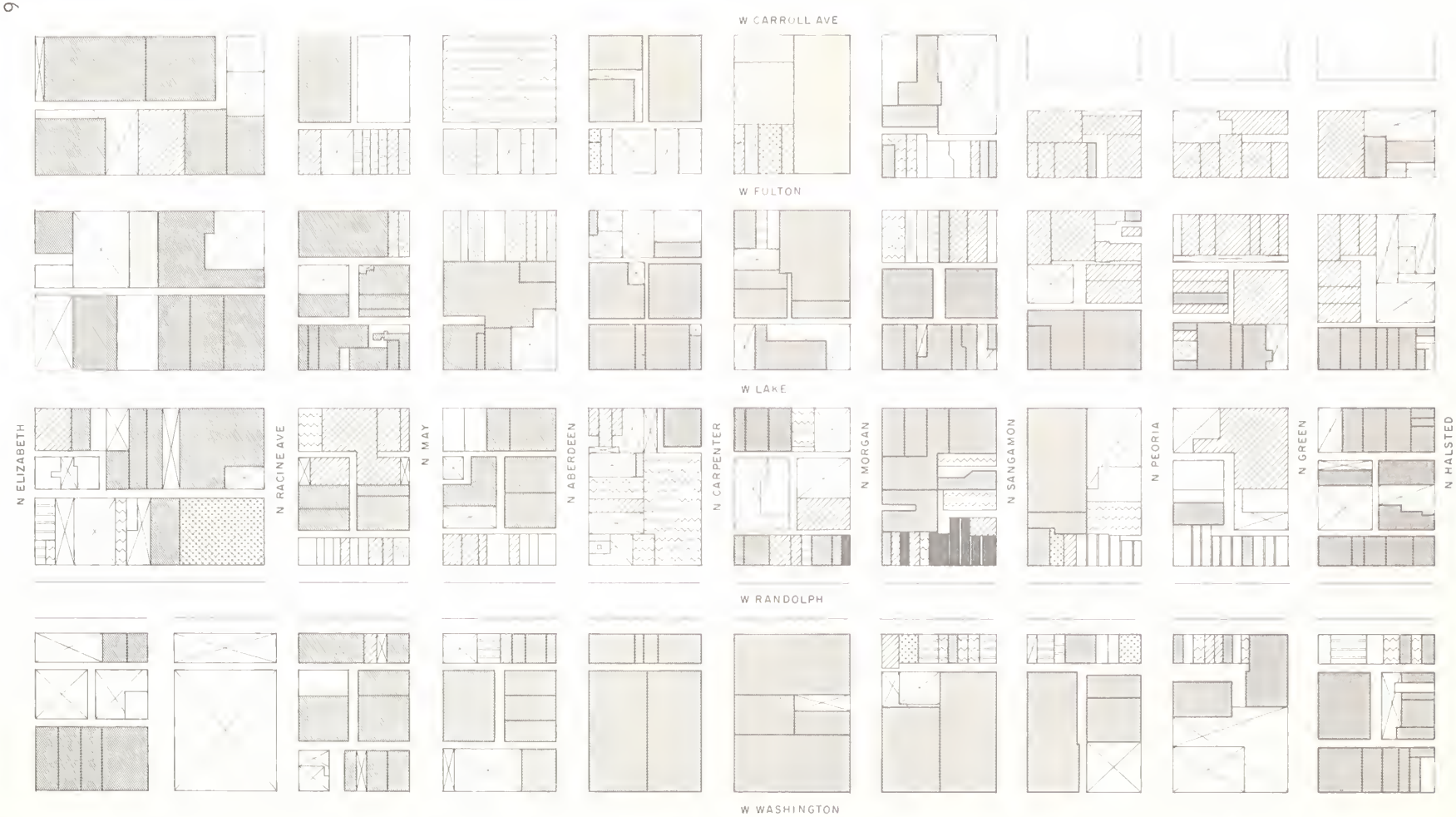


FIGURE 10.--Land use in the combined Fulton-Randolph Market area.

The physical facilities in the market are generally 70 to 80 years old. Although there are a number of modern buildings scattered throughout the market, the general appearance is one of an old area. Buildings have from one to six floors with the first floor at street level. Vacancies are numerous, especially on Randolph Street, as a result of the frequent changes in the businesses in the market. Changes in occupancy, organization, and sometimes ownership characterize the street. Figure 11 shows

BN-28902

FIGURE 11.--A, Looking west on Fulton Street in the late morning; B, many loading operations on Fulton Street require makeshift arrangements to move the products into the facilities; C, interior of one of the facilities on Fulton Street showing an orderly arrangement of product.

the Fulton Street Market, a typical unloading operation, and the interior of one of the facilities in the market.

Fulton Street experiences severe traffic congestion during the morning hours when merchants are loading and moving products away from the market. The congestion is not nearly as noticeable on Randolph Street for two reasons: (1) The area is not as concentrated and the density of operators is considerably less, and (2) Randolph has dividers which separate through traffic and local service streets. However, this division sometimes complicates movements between operators on Randolph Street. Figure 12 shows Randolph Street and the difference in traffic composition and flow in comparison to Fulton Street (fig. 11A). The street-level operations, as well as the crowded, disorganized condition of the interior operations, are also evident.

In contrast to the Fulton Street portion of the market area--where the action is at a hectic pace, traffic is congested, and a general attitude of rush is prevalent--Randolph Street is relatively deserted of market vehicles at almost any hour of the day.

Local traffic conditions, are, unfortunately, far inferior to the long-distance access to the market area. Motor vehicles serving the Fulton-Randolph Market area, through the use of Lake Street and other streets in the area, have almost immediate access to the expressway system that includes Dan Ryan, Congress, Northwest, Edens, and other portions of the Interstate system. Fulton Street is 66 feet wide, the same as other streets in the area except Randolph, which has 40-foot-wide service streets on each side of the main street (fig. 12). The service streets are used primarily for parking passenger vehicles.

Direct rail sidings are not available in the market area except in a very limited area just off Fulton Street. The team tracks used by merchants in the South Water Market area are also available to the operators in the Fulton-Randolph Market area.

Public parking areas are not as numerous as in the South Water Market area and as a consequence, double parking and street parking are much more prevalent. Private parking garages are maintained by several operators.

Originally established as an outlet for locally produced agricultural products, the Randolph Street market has long lost its identity as a farmers' market. It was still controlled by a municipal market master as late as 1963.

The assessed valuation for tax purposes indicates the quality of property in the area. Land, as indicated in figure 13, is valued at about 83 cents per square foot and improvements at about $2 per square foot. There are exceptions, but the values in the area are considerably below those that the best usages for the area would yield.

The hours of operation are about the same as in the South Water Market area where many operators are in the market by 4:00 a.m. and have their facilities ready to conduct business. The main activity is completed about noon each day.

BN-28964

FIGURE 12.--A, Looking west on Randolph in the vicinity of Peoria Street; B, the local street access showing sidewalk unloading and loading out areas; C, interior disorganization in one of the facilities on Randolph Street.

LEGEND

AVERAGE ASSESSED VALUE OF LAND & IMPROVEMENTS IN DOLLARS PER SQUARE FOOT BY BLOCKS

AVERAGE VALUE

LAND	0.83
IMPROVEMENTS	1.99
TOTAL	2.82

N

Scale of Feet

0 50 100

FIGURE 13.--Assessed value of property in the Fulton-Randolph Market area, 1963.

The Stockyards Market Area[9]

The operators in the Stockyards area handle mostly meat and meat products, although a few handle other commodities. It is not a complete market, nor is it a well-defined area devoted only to meat wholesaling. The 64 operators are scattered throughout the general area surrounding the Union Stockyards. Because the operators are not centralized in the area, it is difficult to delineate the boundaries. The area commonly referred to as the Stockyards covers the square mile between Pershing Road, Halsted Street, 47th Street, and Ashland Avenue. Some of the operators are located within this area, but most are located within two or three blocks around the area.

For almost a century this area was one of the major stockyards and meatpacking centers in the world. Employment in the area reached a peak of about 50,000 at the close of World War II. After the war, employment began to decline, and by 1953 it was about 40,000. It is estimated that only 14,300 were employed in the area in 1958 and today less than 5,000 (2).

A general exodus of the meatpacking business occurred between 1953 and 1958 and left the area covered with old, multistory slaughter houses which were obsolete. Most of these have been razed. Figure 14 shows some of the old packinghouses in the process of being demolished, as well as some of the areas where pens and other structures no longer used or needed have been removed.

The area is located about 5 miles south of downtown Chicago. Convenient highway express routes connect the area with the Dan Ryan expressway which leads into and connects with the major interstate routes as well as the expressway system of the city. The area is about 1 mile south of the Southwest expressway, which was completed in 1964.

Few locations in the city of Chicago or elsewhere have superior rail facilities and connections. The area is served by the Chicago River and Indiana Railroad, a segment of the New York Central System. Access to this railroad is provided to most of the major carriers serving Chicago.

[9] Only operators handling meat and meat products are included in this area. The few operators in the area handling other food commodities are classified as "other city" to avoid revealing individual data.

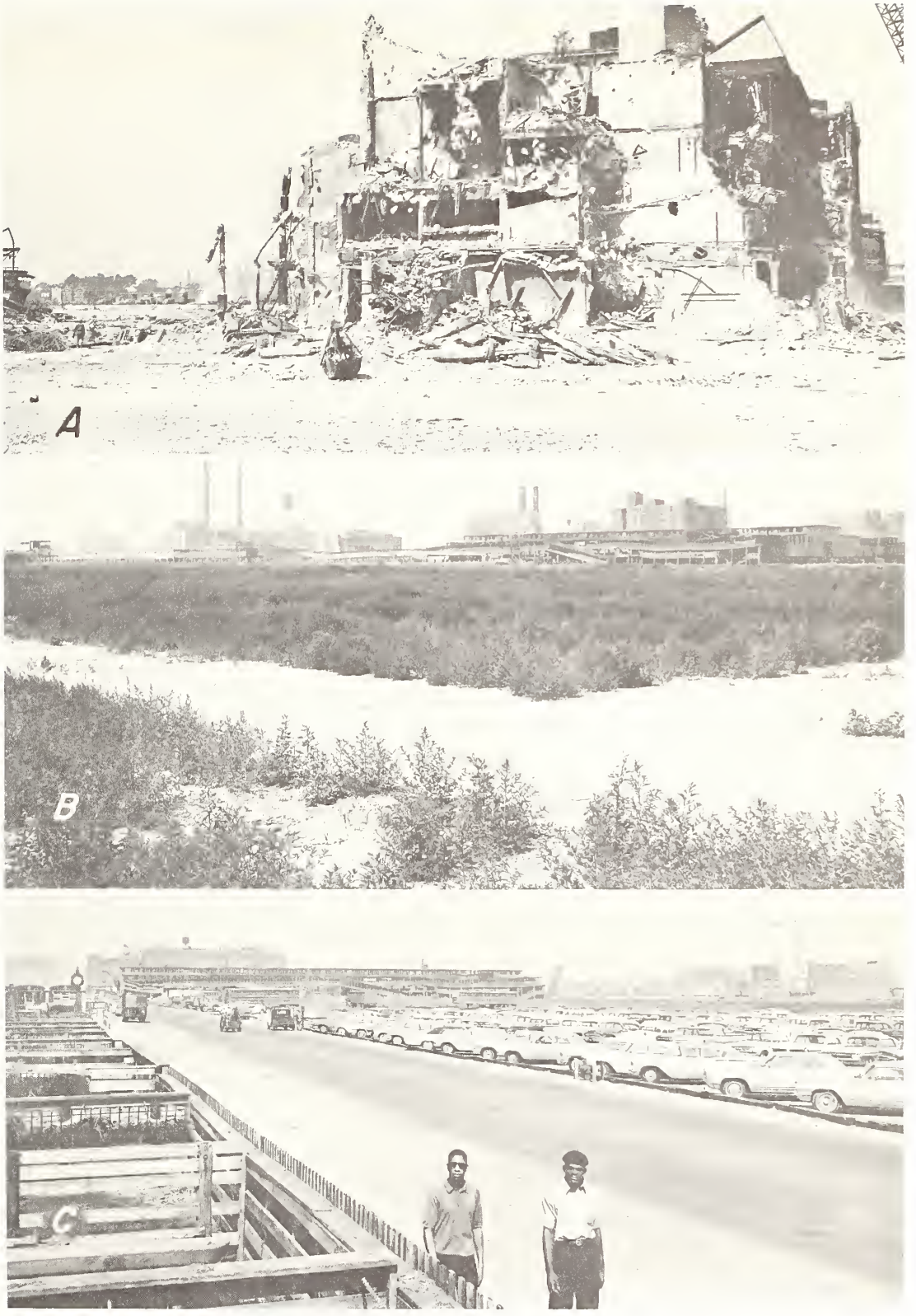
The decrease in the volume of livestock marketed and slaughtered in the stockyards has brought about drastic economic changes in the area. Table 4 shows the receipts of livestock for the 10-year period 1954-63. The steady decline in total numbers, as well as individual species, reflects the changes that have been occurring.

About 70 percent of the receipts are transshipped to eastern packers (2). The volume shipped to eastern packers, combined with that shipped to packers in South Bend, Grayslake, Elgin, Elburn, Aurora, New Rochelle, and other nearby points accounts for a large part of the volume handled in the yards.

Although there have been substantial changes in the location and facilities of the livestock slaughterers, little change is noticeable in the wholesale meat business conducted by others. The volume of meat handled by wholesalers in the area is greater than ever before in the history of the yards. It is being shipped into the area in carcass form, and the cutting, boning, processing, and purveying continue to be done in the area. Previously, much of the volume of livestock slaughtered in the area was destined for eastern markets. The economy of the yards and the surrounding neighborhoods has felt the impact of the slaughterers' vacating the area because of the relatively large number of people they employed. Unemployment would have been a problem in the area, however, even if the slaughterers had constructed new facilities in the Stockyards, as improved efficiency in the wholesale segment of the meat economy has no doubt reduced the number of workers needed.

Although many of the whole sale facilities in the Stockyards are old and obsolete, there are modern, efficient ones interspersed. Obsolescence is probably the major problem facing the operators in the area. Many occupy facilities which it is either uneconomic to modernize or impossible to alter so that modern technology might be fully utilized.

This study does not attempt to delineate the problems facing the livestock market in Chicago; however, they are closely related to the problems facing many wholesale food operators in the area. Studies made in the area have recommended redevelopment and relocation. A full-scale study of the functions, operation, location, and future needs of the livestock market obviously would be beneficial to the city of Chicago, livestock producers, and meat



BN-28963

FIGURE 14.--A, One of the old packing plants being torn down in the Stockyards in 1963; B, looking across the Stockyards where livestock pens have been removed; packing plants and old elevated livestock driveways are in the background; C, looking west on Exchange Avenue.

TABLE 4.--Livestock receipts at public stockyards in Chicago, by species and by year, 1954-63[1]

Year	Hogs	Cattle	Calves	Sheep[2]	Total
	Thousands	Thousands	Thousands	Thousands	Thousands
1954.....	2,779	2,271	113	474	5,637
1955.....	3,291	2,317	125	643	6,376
1956.....	3,198	2,482	132	562	6,374
1957.....	2,603	2,548	85	496	5,732
1958.....	2,578	2,427	42	436	5,483
1959.....	2,508	2,334	30	501	5,373
1960.....	1,848	2,207	20	370	4,445
1961.....	1,728	1,972	14	297	4,011
1962.....	1,786	1,665	7	261	3,719
1963.....	1,798	1,607	4	143	3,552

[1] Source: Agricultural Statistics, 1964.
[2] Includes lambs.

consumers in order that a sound program for the future of the area could be developed.

Other City and Suburban

Slightly over half, or 386, of the 751 wholesale food operators occupy facilities outside of the three market area. A total of 220 of these are in the city of Chicago and 166 are located in the remainder of the study area. Small groups of wholesalers are located at many points throughout the area. An area on South State Street between 70th and 71st Streets is an example of a little group of wholesalers that perform a somewhat local function. The area was partially redeveloped when the South Expressway was constructed and they have maintained their limited operations. The average operation utilizes about 3,000 square feet of floor space at street level in shedlike structures. During holiday seasons and times when fresh products are available from nearby farm areas this group of wholesalers enjoy a ready local and retail type of trade.

Other clusters or small groups of operators are located in the suburban areas such as Joliet, Waukegan, Aurora, and Elgin. These operators usually rely on larger volume wholesale operators in the city for their supplies, and they in turn supply local retail outlets. Many of these small clusters of operators are located in facilities that were not designed for or suited to wholesale food handling operations.

Most of the wholesale operators in these areas were located in obsolete, multistory facilities such as are found in the Fulton-Randolph market area. A few operators have renovated their facilities in recent years which resulted in some increased operating efficiency. The original design of many of the buildings is such that renovation is economically impossible. Some of the few operators that have constructed modern facilities that permit a high degree of internal operational efficiency have serious external deficiencies such as insufficient parking and poor location.

The trend of the national chains is toward suburban locations with complete, modern, well-designed facilities and equipment. Operational space is usually a single floor at truckbed and rail-car floor heights to facilitate unloading and loading out.

Other Characteristics of Wholesale Food Facilities and Operations

Tenure of Operators

Almost two-thirds of the 747 wholesale food operators in Chicago owned the facilities occupied by their businesses, 37.8 percent rented, and 0.8 percent owned part and rented part of the facilities occupied. Table 5 gives a summary of tenure arrangements by commodity and by market area.

TABLE 5.--Tenure status of 747 wholesale food operators by commodity and by market area, in Chicago, 1962[1]

Classification	Owning		Renting		Owning-renting[2]		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Commodity:								
Fruits and vegetables.....	108	68.4	47	29.7	3	1.9	158	100
Meat and meat products....	202	60.8	127	38.2	3	1.0	332	100
Poultry.....	19	43.2	25	56.8	--	--	44	100
Butter, eggs, and cheese..	39	66.1	20	33.9	--	--	59	100
Frozen foods.....	32	61.5	20	38.5	--	--	52	100
Groceries.....	59	57.8	43	42.2	--	--	102	100
Total.....	459	61.4	282	37.8	6	.8	747	100
Market area:								
South Water.....	74	67.9	32	29.4	3	2.7	109	100
Fulton-Randolph.....	155	82.4	32	17.0	1	.6	188	100
Stockyards.....	37	57.8	26	40.6	1	1.6	64	100
Other city.....	119	54.1	101	45.9	--	--	220	100
Suburban.....	74	44.6	91	54.8	1	.6	166	100
Total.....	459	61.4	282	37.8	6	.8	747	100

[1] Excludes national food chain warehouses.
[2] Owns part and rents part of the facilities occupied.

The rate of ownership was highest in the Fulton-Randolph Market area (82.4 percent) and lowest in the suburban area (44.6 percent). By commodities, fruit and vegetable operators had the highest rate of ownership (68.4 percent) and poultry handlers the lowest (43.2 percent).

In most other cities where studies have been conducted, about two-thirds of the operators rent the facilities occupied.

Space Occupied

The 747 operators occupied a total of 13,718,917 square feet, or about 315 acres, of floor space in 1962. This includes all space such as basements and second, third, and other floors, whether or not they were used for handling and marketing the six commodity groups of food. It includes office space, storage space, operating areas, and unused areas which are uneconomical or otherwise not feasible to use for handling food. Table 6 gives a breakdown of the space occupied, by commodity and by market area.

Wholesalers handling meat and meat products operated in 42.1 percent of the total space occupied by the 747 operators. Almost one-third, or 32.4 percent, was occupied by operators handling groceries. Only 11.0 percent was occupied by fruit and vegetable dealers, 6.2 percent by butter, egg, and cheese operators, 5.3 percent by frozen-food dealers, and 3.0 percent by poultry operators.

By market areas, about one-third of the total floor space occupied was in the "other city" area and one-fourth was in suburban facilities. The smallest amount, 7.5 percent, of the floor space occupied was located in the South Water Market area. The Fulton-Randolph area and the Stockyards area each contained about 15 percent of the floor space occupied.

Number of Floors

As the number of floors increased, the percent of space utilization decreased. Of the 747 wholesale food operators, only 3.8 percent occupied more than four floors, excluding basements, in their facilities, and only 1.7 percent operated in facilities with basement space. A total of 57.3 percent operated on only one floor, 20.8 percent on two floors, and 16.4 percent on three floors. The three-floor operations were principally in the South Water Market area.

Number of Employees

The 747 wholesale operators handling the six groups of food products employed 19,565 workers. This does not include those who were in executive positions and those employees such as bookkeepers, clerks, and others in administrative positions not directly involved in the handling operations. Table 6 gives a breakdown by market area and commodity handled.

Over half, or 55.4 percent, of the 19,565 employees are associated with handling, processing, and other aspects of marketing meat and meat products. About 10 percent were employed in the handling of fruits and vegetables, 21 percent in groceries, and slightly less than 5 percent each

TABLE 6.--Space occupied and number of employees for 747 wholesale food operators by commodity and by market area, and average per operator in Chicago, 1962[1]

Classification	Space occupied			Number of employees		
	Total	Proportion of total	Average	Total	Proportion of total	Average
	Sq. ft.	Percent	Sq. ft.	Number	Percent	Number
Commodity:						
Fruits and vegetables	1,505,060	11.0	9,526	1,849	9.5	12
Meat and meat products	5,785,617	42.1	17,427	10,842	55.4	33
Poultry	405,018	3.0	9,205	855	4.4	19
Butter, eggs, and cheese	847,047	6.2	14,357	947	4.8	16
Frozen foods	726,377	5.3	13,969	962	4.9	18
Groceries	4,449,798	32.4	43,625	4,110	21.0	40
Total or average	13,718,917	100.0	18,365	19,565	100.0	26
Market area:						
South Water	1,023,832	7.5	9,393	1,418	7.2	13
Fulton-Randolph	2,127,437	15.5	11,316	2,587	13.2	14
Stockyards	2,160,192	15.7	33,753	3,520	18.0	55
Other city	4,967,623	36.2	22,580	7,719	39.5	35
Suburban	3,439,833	25.1	20,722	4,321	22.1	26
Total or average	13,718,917	100.0	18,365	19,565	100.0	26

[1] See table 5 for number of operators.

in poultry, frozen foods, and butter, eggs, and cheese.

About two-fifths, or 39.5 percent, of all employees work in the "other city" areas. About four-fifths, or 77.9 percent, of all the employees of the 747 wholesale operators are employed within the city limits.

The average number of employees per operator was 26. The average employment by commodities is as follows: fruits and vegetables, 12; butter, eggs, and cheese, 16; frozen food, 18; poultry, 19; meat and meat products, 33; and groceries, 40.

Although the operators handling meat and meat products employ the greatest number of people (10,842) and have one of the highest average number of employees per firm (33), only about 3,500 people were employed in food handling in the Stockyards area in 1962. The average size firm in the stockyards area employed 55 people. A few relatively large employers obviously remain in the area even though a large segment of the meatpacking industry has relocated. See table 6 for a complete breakdown of the number of employees by commodity and location.

Food Chain Warehouses

A large part of the food in Chicago, as in many of the cities throughout the United States, is distributed by food chain warehouses[10] that operate either regionally or nationally. In the United States, national and regional chains accounted for about 41 percent of the total food sales in 1962. In the Chicago area this group handled 28.7 percent of the total direct receipts in 1962, but handled a much smaller percentage of meats and a much larger proportion of groceries and frozen foods. Table 7 gives a breakdown by commodities of the volumes and percentages received by the 747 wholesale operators and the 4 food chains.

[10] Food chain warehouses as used herein refers to those organizations which are operating nationally or over wide areas that include several States. Local chains, associated groups, and cooperative associations are not included.

TABLE 7.--Volume of wholesale food commodities received direct by national chain organizations and independent wholesale operators, Chicago, 1962

Commodity	Independent operators[1]		Chain organizations[2]		Total volume
	Volume	Proportion	Volume	Proportion	
	Tons	Percent	Tons	Percent	Tons
Fruits and vegetables	1,187,912	75.1	394,515	24.9	1,582,427
Meat and meat products	1,307,426	92.6	104,094	7.4	1,411,520
Poultry	132,074	78.6	36,061	21.4	168,135
Butter, eggs, and cheese	291,275	64.0	164,099	36.0	455,374
Frozen food	117,397	53.8	100,958	46.2	218,355
Groceries	1,472,714	59.1	1,018,268	40.9	2,490,982
Total or average	4,508,798	71.3	1,817,995	28.7	6,326,793

[1] Includes 747 operators. Cooperatives and associated wholesalers are included as independent operators; their receipts are included under groceries.
[2] Includes 4 national chain warehouses.

Public Refrigerated Warehouses

Public refrigerated warehouses are located throughout the city of Chicago and the surrounding area. In 1965 the National Association of Refrigerated Warehouses reported 16 firms operating facilities in the area. These operators had slightly more than 36.1 million cubic feet of refrigerated space.

Each of the major market areas has public refrigerated facilities in or adjacent to the main groups of food handlers.

Flow of Food Products Through the Markets

The movement of 6.3 million tons of food products through the marketing channels in Chicago constitutes a very complex and intricate distribution problem. In Chicago, instead of one market area, there are several, and at least six groups of food products, each with its own special characteristics. The movements are further complicated by the large number of auxiliary facilities, such as the produce terminal, the auction, and other areas where products are exchanged, traded, shipped, and processed. Receiving points are scattered throughout the city. The movements are further complicated by the numerous exchanges of products between operators and between markets. Movements between operators within a market area are hereinafter referred to as intramarket transfers, and transfers between operators in different markets are referred to as intermarket transfers.

From the first point of arrival of products into the city until they were distributed to retail outlets or loaded onto vehicles which moved them out of the city, 776,129 tons of products were handled by more than one wholesale firm. About 524,000 tons were transferred from one market to another and 252,000 tons were moved between facilities within markets. Table 8 shows the various amounts received, transferred to other markets, transferred within markets, and the total volumes handled, by commodities and by market areas.

Transfers form an important part and function in the wholesale markets. Without them the immediate needs and requirements of consumers might not be met. The wholesale market is the primary point where the demand and supply of food products are equated, and with present technology they can only be equated economically and efficiently by transferring products between operators.

Two market areas, the South Water area and the Stockyards area, because they are devoted principally to fruits and vegetables and meats, respectively, are treated as markets for these two groups of commodities. There are a few wholesale operators in the South Water market handling meat, groceries, and other products. Movements and other factors concerning these operations will not be discussed separately because individual volumes, costs, and movements would be revealed.

Figure 15 depicts the movement of food products from the first point of arrival through the various markets to the retail outlets throughout the study area and to other destinations. The movement of products from the auction and the team tracks located in the Chicago Produce and Wood Street terminals to South Water market and other destinations are not shown. These receipts are shown as originating on team tracks, at the auction, and as sales from team tracks.

The total volume of food products handled, 7,102,922 tons, is slightly more than 10 percent greater than the total volume of products received direct. The difference is the amount that is transferred between operators and markets.

Intermarket transfers add tremendously to the cost of distributing products. Because of the large number of scattered markets, the tonnage of intermarket transfers is more than twice as great as intramarket transfers, the less expensive and less time-consuming type. Table 9 gives the breakdown of intermarket transfers by source and destination.

Of the 6.3 million tons received in the city, 2,559,000 tons, or 40.5 percent, were distributed to retail and other outlets in the city of Chicago, 2,121,000 tons, or 33.5 percent, were moved to consuming points in the suburban areas, and the remaining 1,647,000 tons, or 26.0 percent, were distributed to points outside the study area (fig. 15). A large portion of the products distributed outside the nine-county study area moved to points in Wisconsin, Indiana, and Illinois.

The distribution of products was broken down into the following areas: Chicago Loop, north Chicago, south Chicago, north suburban, northwest suburban, southwest suburban, south suburban, Indiana suburban, other Illinois, other Indiana, Wisconsin, and all other. The Chicago Loop includes the area bounded on the north and west by the

TABLE 8.--Receipts and transfers of wholesale food products, by commodity and by market area, Chicago, 1962

Commodity group and movement	South Water[1]	Fulton-Randolph	Stock-yards[1]	Other city	Suburban	Total, excluding national chains	National chains	Total
	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons
Fruits and vegetables:								
Direct receipts	871,182	16,957	0	128,148	171,625	1,187,912	394,515	1,582,427
Intermarket transfers[2]	0	16,957	0	31,438	35,747	84,142	110,299	194,441
Intramarket transfers[3]	83,108	4,904	0	11,340	0	99,352	0	99,352
Total handled	954,290	38,818	0	170,926	207,372	1,371,406	504,814	1,876,220
Meat and meat products:								
Direct receipts	0	250,039	520,788	478,631	57,968	1,307,426	104,094	1,411,520
Intermarket transfers[2]	0	29,377	0	93,179	99,782	222,338	101,419	323,757
Intramarket transfers[3]	0	11,731	129,800	0	0	141,531	0	141,531
Total handled	0	291,147	650,588	571,810	157,750	1,671,295	205,513	1,876,808
Poultry:								
Direct receipts	0	27,938	0	90,260	13,876	132,074	36,061	168,135
Intermarket transfers[2]	0	0	0	0	420	420	0	420
Intramarket transfers[3]	0	2,728	0	0	0	2,728	0	2,728
Total handled	0	30,666	0	90,260	14,296	135,222	36,061	171,283
Butter, eggs, and cheese:								
Direct receipts	0	70,253	0	165,879	55,143	291,275	164,099	455,374
Intermarket transfers[2]	0	0	0	0	1,516	1,516	0	1,516
Intramarket transfers[3]	0	2,318	0	0	0	2,318	0	2,318
Total handled	0	72,571	0	165,879	56,659	295,109	164,099	459,208
Frozen foods:								
Direct receipts	0	28,306	0	51,938	37,153	117,397	100,958	218,355
Intermarket transfers[2]	0	0	0	3,428	514	3,942	0	3,942
Intramarket transfers[3]	0	6,124	0	0	0	6,124	0	6,124
Total handled	0	34,430	0	55,366	37,667	127,463	100,958	228,421
Groceries:								
Direct receipts	0	34,136	0	789,464	649,114	1,472,714	1,018,268	2,490,982
Intermarket transfers[2]	0	0	0	0	0	0	0	0
Intramarket transfers[3]	0	0	0	0	0	0	0	0
Total handled	0	34,136	0	789,464	649,114	1,472,714	1,018,268	2,490,982
All commodities:								
Direct receipts	871,182	427,629	520,788	1,704,320	984,879	4,508,798	1,817,995	6,326,793
Intermarket transfers[2]	0	46,334	0	128,045	137,979	312,358	211,718	524,076
Intramarket transfers[3]	83,108	27,805	129,800	11,340	0	252,053	0	252,053
Total handled	954,290	501,768	650,588	1,843,705	1,122,858	5,073,209	2,029,713	7,102,922

[1] South Water Market is treated solely as a market for fruits and vegetables and the Stockyards as a market for meat, although a few other wholesalers occupy facilities in the area. This is what these markets have been known for since they were built. Individual data for other wholesalers would be revealed in later sections of this report if their volumes were presented here.

[2] Receipts from operators outside the market area.

[3] Receipts from operators within the market area.

Chicago River and on the south by Congress Street. North Chicago includes that area north of Congress Street within the city of Chicago, excluding the Chicago Loop. South Chicago includes the area within the city of Chicago south of Congress. North suburban includes that area within the study area north of Interstates 90 and 94, excluding any part of the city of Chicago. Northwest suburban includes that area within the study area north of Illinois Tollway and south and west of Interstates 90 and 94, excluding any part of the city of Chicago. Southwest suburban includes that area within the study area north of Interstate 55 and south of the Tollway, excluding any part of the city of Chicago. South suburban includes the area in the study area east of Interstate 55 and

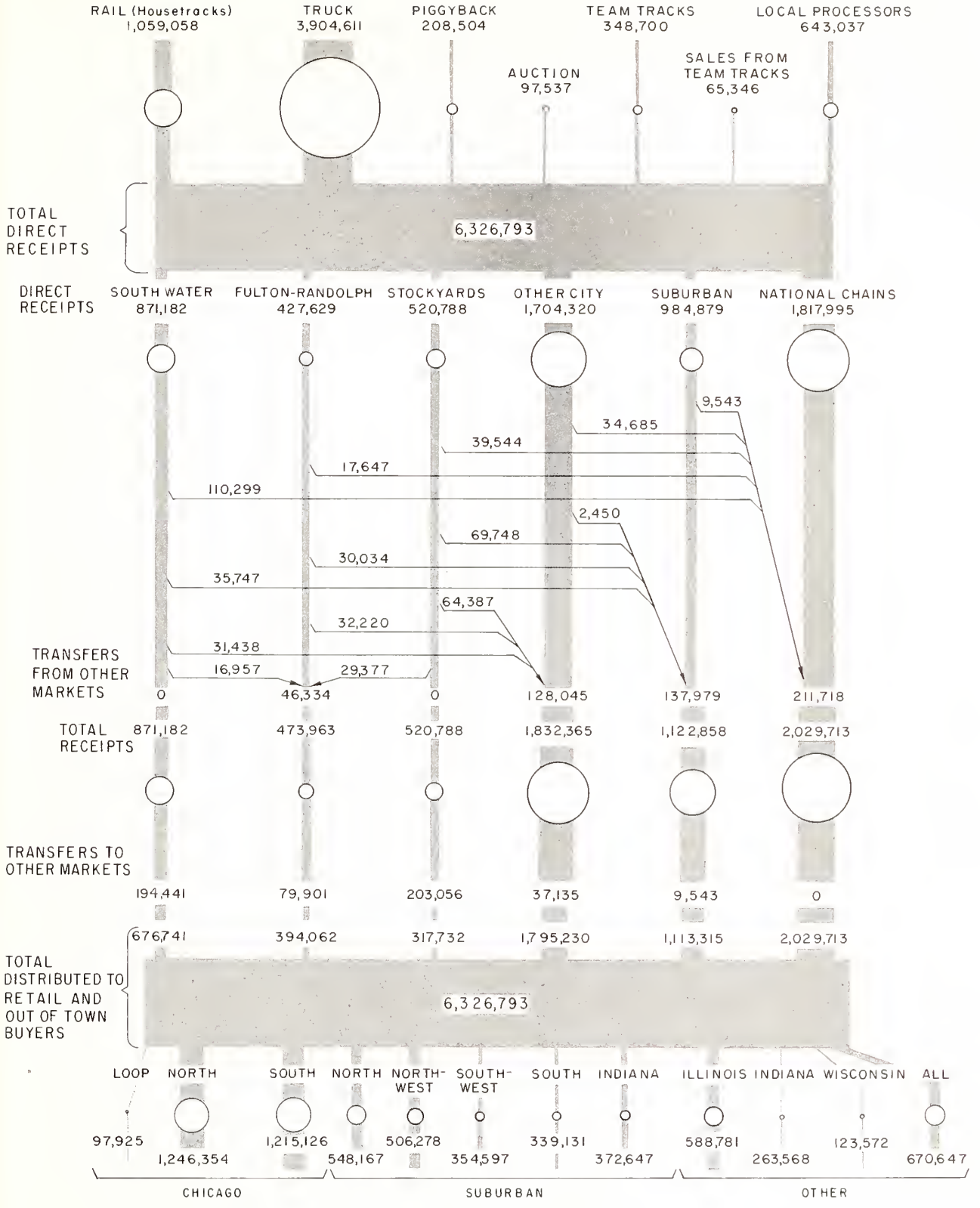


FIGURE 15.--Movement of all food commodities through the wholesale markets of Chicago.

TABLE 9.--Source and destination of food products transferred between markets in Chicago, 1962

Transferred to--	Transferred from--					Total
	South Water	Fulton-Randolph	Stockyards	Other city	Suburban	
	Tons	Tons	Tons	Tons	Tons	Tons
Fulton-Randolph	16,957	--	29,377	--	--	46,334
Other city	31,438	32,220	64,387	--	--	128,045
Suburban	35,747	30,034	69,748	2,450	--	137,979
Food chains	110,299	17,647	39,544	34,685	9,543	211,718
Total	194,441	79,901	203,056	37,135	9,543	524,076

west of the Illinois-Indiana border, excluding any part of the city of Chicago. Indiana suburban includes Lake and Porter Counties in Indiana. Other Illinois includes all of Illinois outside the study area. Other Indiana includes all of Indiana except Lake and Porter Counties. Wisconsin includes all of the State of Wisconsin. All other includes all other areas not included in one of the above.

Fruits and Vegetables

A total of 1,582,427 tons of fruits and vegetables were received by the 158 wholesale operators and 4 chain organizations in 1962. Almost 19 percent, or 293,793 tons, of these products were handled in more than one facility. Transfers between markets amounted to 194,441 tons and 99,352 tons were transferred between operators within markets. The total volume handled by all operators, which includes the amounts received direct and the intramarket and intermarket transfers, was 1,876,220 tons.

South Water market operators received the largest volume, 871,182 tons, or 55.1 percent of the total direct receipts. Food chains received about 25 percent of the total. The remaining 20 percent was received by operators scattered throughout the metropolitan area.

About 194,000 tons of intermarket transfers by fruit and vegetable operators originated in South Water market, and more than half, or 110,299 tons, were transferred to the national chains.

More than half of the direct receipts, or 829,304 tons, were distributed in the city of Chicago, About one-third, or 514,199 tons, moved to suburban and "other city" markets, and 15.1 percent was distributed to points outside the study area.

Meat and Meat Products

The total volume of meat and meat products received by the 332 wholesale operators and 4 chain organizations in the study area was 1,411,520 tons. Actually, these firms handled 1,876,808 tons of product, because, in addition to the direct receipts, they transferred 323,757 tons between markets and 141,531 tons between operators within markets. Total transfers were 465,288 tons.

The stockyards area operators received 520,788 tons, or 36.9 percent, Fulton-Randolph operators 250,039 tons, or 17.7 percent, "other city" operators 478,631 tons, or 33.9 percent, and suburban and chain operators received the remaining 11.5 percent.

The volume of products distributed to the city of Chicago outlets accounted for 547,908 tons, or 38.8 percent, of the direct receipts and almost this much, or 37.5 percent, moved to outlets outside the study area. Suburban area outlets received 333,854 tons, or 23.7 percent of the receipts.

Poultry

The direct receipts of poultry by the 44 wholesale operators and the 4 chains amounted to 168,135 tons in 1962. There were only 3,148 tons of transfers between all operators, which is slightly less than 2 percent of the direct receipts. The total volume handled was 171,283 tons.

Poultry operators located outside the established areas, but within the city of Chicago received 90,260 tons of poultry. Chain warehouses received 36,061 tons of the direct receipts.

Of the total 168,135 tons distributed, 40.5 percent moved into the city, 36.1 percent was distributed to the suburban area, and 23.4 percent was directed to points beyond the boundaries of the study area.

Butter, Eggs, and Cheese

The 59 butter, egg, and cheese operators and the 4 national chains received a total of 455,374 tons of these products in 1962. In addition to the direct receipts, 1,516 tons were transferred between markets and 2,318 tons were transferred between operators within markets. A total of 459,208 tons of products were handled. Transfers of all types between operators were less than 1 percent of the direct receipts.

Operators in the "other city" area received 165,879 tons, or 36.4 percent, of the direct receipts. Almost as much, or 36.0 percent, was received by the four national chains, and the remaining 27.6 percent was received by operators in Fulton-Randolph and the suburban areas.

Of the total receipts, 27.9 percent was distributed within the city of Chicago, 32.6 percent in the suburban areas, and 40 percent to consumption points outside the study area.

Frozen Food

The 52 wholesale operators and the four national chains received 218,355 tons of frozen foods in 1962. In addition, there were transfers of 3,942 tons between markets and 6,124 tons between operators within markets. The total volume handled was 228,421 tons. The 10,066 tons transferred between operators amounted to 4.6 percent of the total direct receipts.

The national chains were the largest single group of receivers of frozen foods. Their receipts accounted for 42.6 percent, or slightly over 100,000 tons, of the total volume.

The final distribution of frozen foods by all operators was such that 37.9 percent remained in the city of Chicago, 43.1 percent moved to suburban areas included in the study area, and 19.0 percent moved to points outside the study area.

Groceries

Almost 2.5 million tons of grocery products were received by the 102 wholesale grocery operators and four national chains in Chicago in 1962. The 2,490,982 tons accounted for 39.4 percent of all direct receipts of food products studied. The volume of groceries handled was over 50 percent greater than any other single commodity received and distributed by Chicago operators. The national chain operators received 1,018,268 tons, "other city" and suburban operators received 789,464 and 649,114 tons respectively, and Fulton-Randolph operators received only 34,146 tons.

There were no significant amounts of transfers between wholesale operators reported at the time of this study.

Of the total tonnage received, 36.3 percent was moved to retail and other outlets within the city of Chicago, 38.9 percent was moved to suburban areas, and the remainder went to points outside the study area.

Selected Costs of Handling Food

Many of the methods, techniques, facilities, and equipment used in handling food in Chicago are inefficient and are costly to producers, market operators, and consumers. To determine the benefits that might be derived from facility improvement, it is necessary to compare costs of operation in present and proposed facilities.

Selected costs in this report are confined to those incurred from the first point of arrival in the metropolitan area until the products reach retail outlets and include the cost of transferring products between operators wherever applicable. They do not include costs for shipment from producing areas to Chicago, nor the costs of distribution outside the study area. The costs are further confined to those which are subject to change because of improvements in facilities and handling methods. Therefore, the costs for such items as heat, lights, management, and wages for office personnel are not included. The costs include only the direct costs or charges for handling the food products that move through the various markets. These costs are classified into four groups:

1. Costs to operators in handling and moving the products from the first point of arrival to operators' facilities.
2. Costs of handling and storage within the markets, including costs such as rentals, facility services, waste, spoilage, and products deterioration.
3. Costs of moving the products from the markets and other areas to retail and other wholesale outlets.
4. Costs that are nonmeasurable.

The cost estimates included in this section were obtained from several sources. A detailed survey of all known operators in the study area was made by the Illinois Institute of Technology under contract by the U.S. Department of Agriculture. Information was obtained on rents or rental

values of owner-occupied facilities, amount and classification of labor involved, volumes handled, transportation methods used to get products to the markets, methods of shipping, and general information on the types of operation. Based on this information, a sample of operators was selected that represented all typesof operators and volumes of products handled. The sample contained a total of 104 operators, or about 15 percent of all operators, including the national chains, and they handled 2.1 million tons, or about 40 percent of the products received in Chicago in 1962. Cross-checks were made, where possible, to insure the reliability of the data developed on estimated costs. All market areas, commodity groups, and types of handlers were represented in the sample.

Costs of getting the products from the first point of arrival to wholesale facilities included cartage costs from team tracks, docks, the auction, and other points to wholesale operators' facilities. These costs were computed from the man-hours required to perform the operations, from wage rates, from vehicle and equipment costs, and from information supplied by local transport firms. Costs for avoidable delay to inbound shipments are based on the time that vehicles and operators had to wait to unload because of traffic congestion in and around the market. Avoidable delay times have increased in the South Water Market area since the data were collected because of regulation of the hours of unloading incoming receipts. Only the South Water Market and the Fulton-Randolph Market had appreciable avoidable delay to inbound or outbound movements. The amount of avoidable delay is much less in the Fulton-Randolph area, and is irregular and dependent upon factors such as weather and accidents.

Handling costs within the facilities are based on cost records of operators handling all types of commodities in the various market areas. Costs of processing, such as sausage making, are not included; however, the costs of boning and breaking into wholesale cuts are considered normal wholesale meat operations and are included. The cost of making transfers between markets and between operators are based on elapsed time for various trips, truck costs, driver's time, and helper's time.

The costs of intermarket transfers were charged to the seller and include loading the trucks, transporting, and unloading at the receiver's facility. Charges for use of handling equipment such as forklift trucks and electric and hydraulic jacks were computed from the operation, depreciation, and maintenance costs furnished by several firms that used the devices.

Other costs in the market areas, in addition to handling costs, were computed from the records of operations in each market area, together with information furnished by buyers, utility companies, public warehouse operators, refrigeration service people, and others.

Costs of protective services or watchmen, insurance, market assessments for garbage collection, street cleaning, and like services are included as facility services in the cost calculations. Facility services also include the cost of refrigeration in those areas where a community or common system is used. Where individual systems are used, the cost of operation is included.

Estimates of losses from waste, spoilage, theft, and product deterioration were made by the operators. In addition, extensive inquiry into the number of broken and damaged packages was made. This information was further corroborated by estimates of operators purchasing damaged or otherwise unmerchantable products.

The costs of distributing the commodities from the markets to retail points in the study area and loading the trucks that delivered to buyers outside the area were computed in the same manner as cartage costs. In order to determine the costs of moving the goods to retail and other outlets the study area was divided into areas of destination as follows: Chicago Loop, north Chicago, south Chicago, north suburban, northwest suburban, southwest suburban, south suburban, Indiana suburban, and outside the area.

A central point of consumption was computed for each of the first eight areas. The average truck loading time was determined by commodity for each market area from the sample of dealers in each area, as well as the average size load, the number of delivery stops per trip, and the running time per round trip from each market to the center of consumption of each distribution area. The average cost per hour for the truck, the hourly wage rates for drivers and for helpers, if any, and the total time required to complete the operations mentioned, completed the information necessary to compute the costs of distribution to retail and other outlets.

The following sections discuss selected costs of operation, by commodity groups.

Fruits and Vegetables

The total selected costs for moving 1.6 million tons of fruits and vegetables through the wholesale markets in Chicago was $23.4 million in 1962. The average cost per ton of products received was $14.78. For a detailed breakdown of the costs in handling these products in Chicago see table 10.

South Water Market operators, on the basis of selected costs of handling, were the most efficient handlers of fruits and vegetables. They moved 871,182 tons of products through the market at an average cost of $11.23 per ton. The food chain warehouses were the next most efficient with a cost of $12.12 per ton for a total of 504,814 tons handled and distributed. The wholesalers in the "other city" markets handled 159,586 tons at a cost of $15.81 per ton, and the suburban dealers moved 207,372 tons through their facilities at a cost of $19.96 per ton. The Fulton-Randolph wholesalers handled only 33,914 tons, but with the highest cost per ton of $24.33.

The cartage and avoidable delay costs for moving the products from the original point of arrival to the wholesalers' facilities amounted to $2,088,000 for 1,776,868 tons involved, or an average of $1.18 per ton. Avoidable delay amounted to $568,000 and occurred in significant amounts only in South Water Market. This total cost of cartage and delay amounted to 8.9 percent of the total cost of handling through the markets.

TABLE 10.--Estimated selected cost of marketing fruits and vegetables at wholesale in Chicago, 1962

Cost item	Volume	Cost	
		Average per ton	Total
Moving products to markets and facilities:	Tons	Dollars	1,000 dollars
Cartage from:			
Team tracks and piers	337,106	3.48	1,173
Other points	97,537	3.56	347
Avoidable delay to inbound vehicles	789,572	.72	568
Receipts with no cartage from:			
Local processors	31,210	0	0
Rail docks (containerized)	64,531	0	0
House tracks	220,560	0	0
Sales from team tracks	41,911	0	0
Trucks from shipping points	789,572	0	0
Receipts from other city markets	194,441	0	0
Total or average cost in getting products to markets	[1] 1,776,868	1.18	2,088
Handling and other costs within markets:			
Labor:			
Unloading at facilities	1,540,516	.99	1,525
Handling within the stores	1,834,309	1.22	2,232
Loading out to buyers' trucks	1,650,815	1.19	1,962
Sales from team tracks	41,911	1.35	57
Intramarket sales	99,352	2.58	256
Equipment use	1,876,220	.01	17
Other costs in the markets:			
Rentals	1,834,309	1.33	2,446
Facility services	1,329,495	.51	683
Waste, thefts, and deterioration	1,876,220	1.02	1,922
Transfer costs to:			
Food chains	110,299	4.50	496
Other wholesalers	84,142	5.88	495
Total or average cost of handling within facilities	[1] 1,876,220	6.44	12,091
Moving products away from markets:			
To retail and other outlets in:			
The city of Chicago	829,304	3.20	2,652
All other points in study area	514,199	11.74	6,037
All points outside study area[2]	238,924	1.17	280
Avoidable delay to outbound trucks	1,582,427	.15	237
Total or average cost of moving products away from markets	[1] 1,582,427	5.82	9,206
Total selected costs	1,582,427	14.78	23,385

[1] Totals are composite figures and are not necessarily sum totals.
[2] Cost of loading trucks destined for points outside the study area.

The largest item of cost was for moving the products through the facilities. This involved unloading, handling through the stores, loading out to buyers' trucks, sales from team tracks, interdealer transfers, rentals, and other costs described earlier. These costs amounted to $12.1 million, or 51.7 percent of the total costs. Handling within the facilities amounted to $2.2 million and represented the highest single item of cost for all handling within the market excluding rentals, which amounted to $2.4 million and was the largest item in the "other costs" classification. Waste and spoilage accounted for $1.9 million and was the next largest.

Costs for distributing the products from the markets made up to 39.4 percent, or about $9.2 million, of the total costs of marketing fresh fruits and vegetables through the Chicago wholesale markets.

Meat and Meat Products

For the 1,411,520 tons of meat and meat products that moved through Chicago wholesale facilities, the total handling and other costs were $76.8 million, or about $54.39 per ton. A complete breakdown of costs may be seen in table 11.

The highest cost was in the Stockyards area where 520,788 tons were handled at

TABLE 11.--Estimated selected costs of marketing meat and meat products at wholesale in Chicago, 1962

Cost item	Volume	Cost	
		Average per ton	Total
Moving products to markets and facilities:	Tons	Dollars	1,000 dollars
Cartage from:			
Team tracks and piers	0	0	0
Other points	0	0	0
Avoidable delay to inbound vehicles	1,178,814	0.22	260
Receipts with no cartage:			
Local processors	35,140	0	0
Rail docks (containerized)	124,157	0	0
House tracks	49,947	0	0
Sales from team tracks	23,435	0	0
Trucks from shipping points	1,178,814	0	0
Receipts from other city markets	323,757	0	0
Total or average cost of getting products to market	[1] 1,735,277	.15	260
Handling and other costs within the markets:			
Labor:			
Unloading at facilities	1,388,085	3.10	4,309
Handling within the stores	1,853,373	10.77	19,967
Loading out to buyers' trucks	1,489,504	3.12	4,644
Sales from team tracks	23,435	3.58	84
Intramarket sales	141,531	4.72	668
Equipment use	1,876,808	.13	252
Other costs in market:			
Rentals	1,853,373	3.36	6,226
Facility services	1,647,860	4.92	8,111
Storage away from stores	1,647,860	.50	817
Waste, thefts, and deterioration	1,876,808	8.00	15,014
Transfer costs to:			
Food chains	101,419	11.68	1,185
Other wholesalers	222,338	9.28	2,063
Total or average cost of handling within markets	[1] 1,876,808	33.75	63,340
Moving products away from markets:			
To retail and other outlets in:			
The city of Chicago	547,908	9.12	4,998
All other points in study area	333,854	18.85	6,293
All points outside study area[2]	529,758	3.33	1,763
Avoidable delay to outbound trucks	1,411,520	.08	119
Total or average cost of moving products away from markets	[1] 1,411,520	9.33	13,173
Total selected costs	1,411,520	54.39	76,773

[1] Totals are composite figures and are not necessarily sum totals.
[2] Costs of loading trucks destined for points outside the study area.

a cost of $56.73 per ton. The next highest cost per ton was in the suburban area with 157,750 tons handled at $50.90 per ton. The wholesalers in the Fulton-Randolph market handled 279,416 tons at a cost of $42.26 per ton and the "other city" wholesalers handled 571,810 tons at $38.14 per ton. The food chain warehouses had the lowest cost per ton of $27.17 with 205,513 tons handled.

The differences in these handling costs per ton between market areas are not a reflection of efficient facilities or handling methods: the differences are mostly due to distribution costs and the type of operations within the facility. In the Stockyards and suburban areas large amounts of cutting, boning, and grinding of meats are performed. In the other facilities, especially the food chain warehouses and the Fulton-Randolph market, little of this type of operation was performed, and as a result, their costs of handling through the facilities were lower.

There was no cartage cost to the dealers' facilities for meat and meat products, largely because about 95 percent of the receipts arrived by truck and piggyback. The other receipts were delivered on house tracks or sold from team tracks.

As described earlier, there was traffic congestion in the meat area of Fulton-Randolph market during certain hours of the day. This caused some avoidable delay but as the receipts in this market amounted to only about 18 percent of the total receipts, the cost per ton of this delay based on total receipts was fairly low in comparison to fruits and vegetables.

Handling and other costs in the markets amounted to 82.5 percent of the total cost, or $33.75 per ton. Handling within the stores amounted to $20 million and was the largest single item of cost. Waste and deterioration was the second largest item of cost, $15 million, or $8 per ton.

Moving the products to consuming areas amounted to about $13 million, or about 17 percent of the total cost of wholesaling meats in the area.

Poultry

The total handling and other costs for poultry were slightly over $4 million for 168,135 tons, or $23.92 per ton. A detailed breakdown of the cost is given in table 12. The wholesalers in the suburban area had the highest cost per ton, $49.95 for the 14,296 tons handled, because of their high distribution costs. The costs in the Fulton-Randolph market amounted to $24.41 per ton for 27,938 tons handled. The food chain warehouses handled 36,061 tons at a cost of $22.90 per ton, and the wholesalers in other Chicago handled the largest tonnage, 90,260 tons with a cost of $20.20 per ton.

Total cartage cost amounted to only about $3,000 for 920 tons that arrived on team tracks in the Fulton-Randolph market.

Handling and other costs in the markets amounted to about $2 million, or $11.68 per ton, and accounted for about 50 percent of the total costs. The largest item of cost was for handling within the stores, which amounted to $467,000.

The cost for distribution to the various retail areas amounted to about half of the total costs, or $2 million.

TABLE 12.--Estimated selected costs of marketing poultry at wholesale in Chicago, 1962

Cost item	Volume	Cost	
		Average per ton	Total
Moving products to markets and facilities:	Tons	Dollars	1,000 dollars
Cartage from:			
Team tracks and piers	920	3.45	3
Other points	0	0	0
Avoidable delay to inbound trucks	158,838	([1])	([1])
Receipts with no cartage:			
Local processors	6,505	0	0
Rail docks (containerized)	1,736	0	0
House tracks	136	0	0
Sales from team tracks	0	0	0
Trucks from shipping points	158,838	0	0
Receipts from other city markets	420	0	0
Total or average cost in getting products to markets	[2] 168,555	.02	3

See footnotes at end of table.

TABLE 12.--Estimated selected costs of marketing poultry at wholesale in Chicago, 1962--Continued

Cost item	Volume	Cost	
		Average per ton	Total
Handling and other costs within markets:	Tons	Dollars	1,000 dollars
Labor:			
Unloading at facilities	168,135	1.74	292
Handling within the stores	171,283	2.73	467
Loading out to buyers' trucks	168,135	1.99	334
Sales from team tracks	0	0	0
Intramarket sales	2,728	4.10	11
Equipment use	171,283	.05	9
Other costs in the markets:			
Rentals	171,283	1.54	263
Facility services	135,222	3.25	439
Storage away from stores	135,222	0.71	96
Waste, thefts, and deterioration	171,283	0.50	85
Transfer costs to:			
Food chains	0	0	0
Other wholesalers	420	11.93	5
Total or average costs of handling within facilities	[2] 171,283	11.68	2,001
Moving products away from markets:			
To retail and other outlets in:			
The city of Chicago	68,128	7.03	479
All other points in study area	60,618	24.17	1,465
All points outside study area[3]	39,389	1.88	74
Avoidable delay to outbound trucks	([1])	([1])	([1])
Total or average costs of moving products away from markets	168,135	12.00	2,018
Total selected costs	168,135	23.92	4,022

[1] Negligible amounts.
[2] Totals are composite figures and are not necessarily sum totals.
[3] Cost of loading trucks destined for points outside the study area.

Butter, Eggs, and Cheese

Selected costs of marketing 455,374 tons of butter, eggs, and cheese totaled $4.6 million, or an average of $10.09 per ton. A detailed breakdown of costs is given in table 13.

Very little cartage was involved in getting products from the first point of arrival to operators' places of business because in most cases the two were synonymous. A small amount, about 500 tons, was received at team tracks and had to be moved to operators' facilities.

The largest single item of cost was for handling within the facilities, which amounted to slightly over $600,000. The total cost of handling and other costs in the market amounted to $2,344,000, or an average of $5.10 per ton. The total costs of distribution were almost as much, $2,248,000, or $4.94 per ton.

The food chains incurred the highest total cost per ton at $12.40 for 164,099 tons handled. Operators in Fulton-Randolph handled 70,253 tons at an average cost of $10.72 per ton. Wholesalers in the suburban areas handled 56,659 tons at an average cost of $9.58 per ton. "Other city" wholesalers handled 165,879 tons at the lowest cost of $7.61 per ton.

Frozen Foods

Operators handling frozen foods probably enjoy more efficient facilities for handling the products and rendering the services required than any other commodity group. This is due primarily to the relatively recent origin of this operation. The 218,355 tons of frozen foods that were handled through the wholesale facilities incurred handling and other costs of about $5 million, or $22.67 per ton. A detailed breakdown of costs is shown in table 14.

The wholesalers in the "other city" area had the highest average cost per ton, $31.82 for the 55,366 tons handled. The next highest cost per ton was in the Fulton-Randolph market with 28,306 tons handled at $28.16 per ton. The wholesalers in the suburban area handled 37,667 tons at a cost of $24.29 per ton. The food chain warehouses handled the largest volume,

TABLE 13.--Estimated selected costs of marketing butter, eggs, and cheese at wholesale in Chicago, 1962

Cost item	Volume	Cost	
		Average per ton	Total
Moving products to markets and facilities:	Tons	Dollars	1,000 dollars
Cartage from:			
Team tracks and piers	424	1.99	1
Other points	0	0	0
Avoidable delay to inbound trucks	388,635	([1])	([1])
Receipts with no cartage:			
Local processors	57,246	0	0
Rail docks (containerized)	4,496	0	0
House tracks	4,573	0	0
Sales from team tracks	0	0	0
Trucks from shipping points	388,635	0	0
Receipts from other city markets	1,516	0	0
Total or average cost in getting products to markets	[2] 456,890	([3])	1
Handling and other costs within markets:			
Labor:			
Unloading at facilities	455,374	0.63	288
Handling within facilities	459,208	1.35	622
Loading out	455,374	.65	294
Sales from team tracks	0	0	0
Intramarket sales	2,318	1.51	4
Equipment use	459,208	.01	6
Other costs in the markets:			
Rentals	459,208	.93	425
Facility services	459,208	1.03	472
Storage away from stores	459,208	.18	83
Waste, thefts, and deterioration	459,208	.30	138
Transfer costs to:			
Food chains	0	0	0
Other wholesalers	1,516	7.96	12
Total or average cost of handling within facilities	[2] 459,208	5.10	2,344
Moving products away from markets:			
To retail and other outlets in:			
The city of Chicago	126,995	3.33	423
All other points in study area	148,431	11.52	1,710
All other points outside study area[4]	179,948	.64	115
Avoidable delay to outbound trucks	([1])	([1])	([1])
Total or average cost of moving products away from markets	455,374	4.94	2,248
Total selected costs	455,374	10.09	4,593

[1] Negligible amounts.
[2] Totals are composite figures and are not necessarily sum totals.
[3] Less than one-half cent.
[4] Cost of loading trucks destined for points outside the study area.

TABLE 14.--Estimated selected costs of marketing frozen foods at wholesale in Chicago, 1962

Cost item	Volume	Cost	
		Average per ton	Total
Moving products to markets and facilities:	Tons	Dollars	1,000 dollars
Cartage from:			
Team tracks and piers	0	0	0
Other points	0	0	0
Avoidable delay to inbound trucks	130,712	(1)	(1)
Receipts with no cartage:			
Local processors	22,435	0	0
Rail docks (containerized)	7,806	0	0
House tracks	57,402	0	0
Sales from team tracks	0	0	0
Trucks from shipping points	130,712	0	0
Receipts from other city markets	3,942	0	0
Total or average cost of getting products to markets	[2] 222,297	0	0
Handling and other costs within markets:			
Labor:			
Unloading at facilities	218,355	1.86	406
Handling within stores	228,421	3.76	860
Loading out	218,355	1.74	379
Sales from team tracks	0	0	0
Intramarket sales	6,124	6.73	41
Equipment use	228,421	.02	4
Other costs in the markets:			
Rentals	228,421	4.68	1,069
Facility services	127,463	1.34	171
Storage away from stores	127,463	.82	104
Waste, thefts, and deterioration	228,421	.30	68
Transfer costs to:			
Food chains	0	0	0
Other wholesalers	3,942	17.00	67
Total or average costs of handling within facilities	[2] 228,421	13.87	3,169
Moving products away from markets:			
To retail and other outlets in:			
The city of Chicago	82,707	6.20	513
All other points in study area	94,225	12.57	1,184
All other points outside study area[3]	41,423	2.05	85
Avoidable delay to outbound trucks	(1)	(1)	(1)
Total or average costs of moving products away from markets	218,355	8.16	1,782
Total selected costs	218,355	22.67	4,951

[1] Negligible amounts.
[2] Totals are composite figures and are not necessarily sum totals.
[3] Cost of loading trucks destined for points outside the study area.

100,958 tons, at $14.63 for the lowest cost per ton. This low rate of handling cost was due to their low distribution costs.

There were no cartage or avoidable delay costs for frozen foods. All receipts arrived on house tracks or by truck. The perishable nature of the product required prompt handling on arrival in order to minimize spoilage.

Handling and other costs in the markets amounted to about $3 million, or $13.87 per ton. This was 65 percent of the total cost. The largest item of cost was for rental of the facilities, which amounted to about $1 million, or $4.68 per ton. The next largest cost item was for handling within the facilities at $3.76 per ton, or $860,000.

Distributing the products to the various consuming areas cost about $2 million, or $8.16 per ton, and accounted for about 36 percent of the total costs of handling and marketing these products.

Groceries

It cost an estimated $43 million to handle the 2,490,982 tons of products classified as

grocery products, or $17.22 per ton. A breakdown of costs of handling grocery products is shown in table 15.

Wholesalers operating in the suburban area, who handled 649,114 tons, had the highest cost per ton of $21.84 and the Fulton-Randolph Market handlers were second highest at $21.62 per ton for 34,136 tons handled. The "other city" handlers moved 789,464 tons through their facilities at a cost of $16.12 per ton. The food chain warehouses showed the most efficient operations by handling 1,018,268 tons at a cost of $14.98 per ton. Cartage costs amounted to only $36,000 for 10,250 tons that were moved from team tracks to the wholesale facilities. This cost was incurred only by the independent wholesalers.

Costs for handling through the markets amounted to about $25 million, or $10.20 per ton, and accounted for 59 percent of all costs. Handling the products in the facilities cost about $12 million, or $4.64 per ton. This was the largest cost item for handling in the markets.

The costs for distribution to the consuming areas amounted to $17 million, or $7.01 per ton. This made up about 41 percent of the total costs.

TABLE 15.--Estimated selected costs of marketing grocery products at wholesale in Chicago, 1962

Cost item	Volume	Cost	
		Average per ton	Total
Moving products to markets and facilities:	Tons	Dollars	1,000 dollars
Cartage from:			
Team tracks and piers	10,250	3.51	36
Other points	0	0	0
Avoidable delay to inbound trucks	(1)	(1)	(1)
Receipts with no cartage:			
Local processors	490,501	0	0
Rail docks (containerized)	5,778	0	0
House tracks	726,413	0	0
Sales from team tracks	0	0	0
Trucks from shipping points	1,258,040	0	0
Receipts from other city markets	0	0	0
Total or average cost of getting products to markets	2,490,982	0.01	36
Handling and other costs within markets:			
Labor:			
Unloading at facilities	2,490,982	1.38	3,445
Handling within stores	2,490,982	4.64	11,546
Loading out	2,490,982	1.74	4,328
Sales from team tracks	0	0	0
Intramarket sales	0	0	0
Equipment use	2,490,982	0.04	111
Other costs in the markets:			
Rentals	2,490,982	1.52	3,797
Facility services	1,472,714	0.54	797
Storage away from stores	1,472,714	0.93	1,375
Waste, thefts, and deterioration	0	0	0
Transfer costs to:			
Food chains	0	0	0
Other wholesalers	0	0	0
Total or average cost of handling within facilities	2,490,982	10.20	25,399
Moving products away from markets:			
To retail and other outlets in:			
The city of Chicago	904,363	4.82	4,362
All other points in study area	969,493	12.26	11,889
All other points outside study area[2]	617,126	1.95	1,206
Avoidable delay to outbound trucks	(1)	(1)	(1)
Total or average cost of moving products away from markets	2,490,982	7.01	17,457
Total selected costs	2,490,982	17.22	42,892

[1] Negligible amounts.
[2] Costs of loading trucks destined for points outside the study area.

Summary of Selected Costs

The 6,326,793 tons of all commodities that were moved through the Chicago wholesale facilities were handled at a total cost of about $157 million, or an average of $24.75 per ton. Itemized costs for all commodities are given in table 16.

Total cartage costs amounted to $1,560,000 for 446,237 tons at an average cost of $3.50 per ton. Avoidable delay of any significant amount occurred only in the South Water and Fulton-Randolph markets and amounted to $1,184,000. The total cartage and avoidable delay involved in moving the products to the wholesale facilities or market areas totaled $2,388,000, or about 1.5 percent of the total costs.

The handling and other costs in the markets were about $108 million, which average $15.25 per ton. This amounted to 69.2 percent of the total selected costs. Total labor and handling costs amounted to $59 million, and other costs such as rentals, facility services, and waste and spoilage, accounted for about $49 million. The largest item of cost in this classification was for handling the products within the facilities. About $35 million was expended for this operation.

TABLE 16.--Summary of estimated selected costs of marketing all food commodities at wholesale in Chicago, 1962

Cost item	Volume	Cost	
		Average per ton	Total
Moving products to markets and facilities:	Tons	Dollars	1,000 dollars
Cartage from:			
Team tracks and piers	348,700	3.48	1,213
Other points	97,537	3.56	347
Avoidable delay to inbound vehicles	3,904,611	.21	828
Receipts with no cartage:			
Local processors	643,037	0	0
Rail docks (containerized)	208,504	0	0
House tracks	1,059,058	0	0
Sales from team tracks	65,346	0	0
Trucks from shipping points	3,904,611	0	0
Receipts from other city markets	524,076	0	0
Total or average cost of getting products to markets	[1] 6,850,869	.35	2,388
Handling and other costs within markets:			
Labor:			
Unloading at facilities	6,261,447	1.64	10,265
Handling within stores	7,037,576	5.07	35,694
Loading out	6,473,165	1.84	11,941
Sales from team tracks	65,346	2.16	141
Intramarket sales	252,053	3.89	980
Equipment use	7,102,922	.06	399
Other costs in the markets:			
Rentals	7,037,576	2.02	14,226
Facility services	5,171,962	2.06	10,673
Storage away from stores	5,171,962	.48	2,475
Waste, thefts, and deterioration	4,611,940	3.73	17,227
Transfer cost to:			
Food chains	211,718	7.94	1,681
Other wholesalers	312,358	8.46	2,642
Total or average costs of handling within facilities	[1] 7,102,922	15.25	108,344
Moving products away from markets:			
To retail and other outlets in:			
The city of Chicago	2,559,405	5.25	13,427
All other points in study area	2,120,820	13.47	28,578
All points outside the study area[2]	1,646,568	2.14	3,523
Avoidable delay to outbound trucks	2,993,947	.12	356
Total or average costs of moving products away from markets	[1] 6,326,793	7.25	45,884
Total selected costs	6,326,793	24.75	156,616

[1] Totals are composite totals and are not necessarily sum totals.
[2] Cost of loading trucks destined for points outside the study area.

The total costs for distributing the commodities to the various consuming areas amounted to $46 million, or an average of $7.25 per ton. This was about 29.3 percent of the total selected costs.

Nonmeasurable Costs

Poor sanitation, substandard working conditions, lack of adequate service facilities, inadequate safety precautions, the effects of long operating hours or other costs, and the inconveniences caused by poor facilities and traffic congestion for operators, employees, buyers, and other groups doing business or having reason to be in the market areas, add to the total costs of handling, marketing, and distributing food in Chicago. These costs are hard to measure objectively and were not determined in this study. Likewise, the costs of police protection, fire protection, and other services supplied by the city or private groups were not determined.

Inadequacies in the Marketing Facilities

Not all of the facilities used by wholesale food operators in handling food are inadequate. Many of them are quite modern, efficient, well located, planned, and operated. Generally, the efficiency of the facilities is directly related to the age. Facilities that were constructed prior to wide use of motor vehicles usually lack proper loading and unloading docks. Those that were constructed prior to adoption of mechanical handling equipment generally lack the proper design features to use this type of equipment effectively. These defects contribute directly or indirectly to higher costs to consumers or to lower prices to producers.

Inadequate Facilities

Many of the wholesale operators handling food are located in multistory structures of antiquated design. Except for a few facilities built or renovated within the last few years, most have serious inadequacies that adversely affect handling and other operating costs. Many facilities lack proper operating space and have floors that are difficult to maintain or are uneven, which makes the utilization of modern materials handling equipment expensive or impossible. Elevators for moving products between floors are often slow, small, or poorly located within the facilities.

With the exception of South Water Market, where the platforms and first floors are of an improper height for maximum efficiency, many facilities have no platforms, and consequently, use the sidewalks as operating space for loading and unloading.

Interior arrangements are often complicated by the lack of rear entrances. Frequently only one entrance and exit is available because the facilities are constructed back to back or adjoin some other property that prohibits movements except at one location, which is usually at the front, facing a major street or thoroughfare. Often, products must be received and shipped out through the same doorway at the same time. The sidewalks, where products were being handled, were often congested with pedestrian traffic, as well as with merchandise. Rear entrances in South Water Market are of limited use because of the narrowness of the streets servicing this entrance.

Inadequate cooler space with improper temperature and humidity controls often results in significant losses to operators and causes poor quality merchandise to be delivered. Refrigeration is available in most of the facilities where it is necessary, but few facilities have humidity control, which is especially important where meat is being broken and handled, where fresh fruits and vegetables are being stored, or where other products such as butter and shell eggs are handled, stored, and processed. Proper humidity controls, in some facilities, have more than offset their cost by reducing shrinkage and other product deterioration.

Inadequate facilities contribute more to the unnecessarily high costs of handling food than any other single factor, primarily because of the extra labor required to perform jobs that could be done much more easily, cheaply, and simply with adequate facilities. Both the size and shape of many facilities are unsuitable for the operations being performed in them. Some operators do not use the space they have to the fullest, and that adds to the cost. For many of them, it is impossible to do so.

Traffic Congestion

Vehicular congestion, caused by an increasing number of semitrailers, vans, panel trucks, pickup trucks, station wagons, and cars using a system of streets that was not designed to carry the load or number of vehicles, is a primary defect of the South Water and Fulton-Randolph market

areas. Traffic in the Stockyards has not become a problem, although at times it exasperates operators in the area. As the Stockyards area is redeveloped under the present methods, traffic problems could be magnified.

Traffic congestion is aggravated by the lack of proper facilities, mainly adequate docking areas. In Fulton-Randolph and South Water markets, incoming trucks must often wait to get into the market. Once in the market, they must wait to get to their unloading destination, and then once unloaded, wait to leave the market. Other vehicles coming into the market must likewise wait or move at an unusually slow pace. Waiting time or time spent inefficiently is expensive when it affects either incoming or outgoing shipments.

At peak periods of operation in the South Water and Fulton-Randolph market areas, congestion is severe enough to cause traffic tieups, making efficient operation virtually impossible. Trends in the industry indicate that the difficulty with traffic will increase rather than diminish in the foreseeable future. Streets designed for horses and wagons are totally inadequate for modern semitrailers. The hours when merchandise can be unloaded are being limited in the South Water Market. This, obviously, tends to increase the cost of operation and encourages shippers to ship direct to chain-store warehouses and retail outlets.

Nonmarket traffic, or traffic that must come into the market areas to service firms handling other products, further aggravates an already serious problem.

Parking for employees, for trucks waiting to load and unload, and for others who bring vehicles into the markets is insufficient, adding to congestion in streets that are overcrowded at their best.

Inadequate Railroad Facilities

Few cities in the United States have the quality of intercity rail services provided operators in Chicago wholesale food markets, but few cities have as poor rail service direct to the facilities as Chicago. The inadequacy of railroad facilities in Chicago increases the amount of traffic congestion in the market areas. A carload of product must be unloaded at a team track and trucked to the market if delivered to an operator in Chicago who has no rail siding at his facilities. Sometimes the products are unloaded at team tracks directly onto delivery or buyers' trucks and moved from the team tracks directly to retail outlets. In either case, the operations are time consuming and result in unnecessary costs to the consumer.

Lack of Centralized Facilities

The scattering of wholesale food facilities throughout the city of Chicago and Cook and the surrounding counties tends to increase the costs of distributing food. Although there are concentrations of wholesale operators in South Water Market, Fulton-Randolph Market, and the Stockyards area, none of these areas can provide sufficient quantities and qualities of all the food needs of a retailer coming into the market to purchase supplies. Fulton-Randolph approaches a complete market, but lacks diversity, as the dominant business is concerned with meat and related products. Moreover, team tracks and rail facilities are not available at the stores of most operators.

Because of the scattered locations, transfers of products between wholesalers are expensive and time consuming. The advantage gained by transfers between markets is usually more than offset by the cost of making the transfer, thus, alternative uses for products are extremely limited.

Poor Working Conditions

The environs of the markets are depressing and far from pleasant and attractive. Adequate protection for employees working outside during inclement weather is often lacking. In rainy or snowy weather streets are usually sloppy because of poor drainage or the absence of snow removal. It is not uncommon to see garbage, trash, crates, and other refuse being burned, usually in a container that employees warm by when working outside on the streets, or on the platforms of some facilities during the winter months. During the summer months decaying garbage, trash, and other refuse often collect, causing unpleasant odors.

Manual labor is often used where the task could be performed more quickly and easily and at less cost by modern handling methods. In many of the facilities it is impossible to utilize modern laborsaving devices in the handling operation because of design or other features of the markets.

Many facilities have crowded work areas, lighting is bad in some, and others are dirty and lack the proper equipment for cleaning. Working hours are long as lack of coordination causes the markets to remain

open many unnecessary hours; double shifts, staggered shifts, and overtime are common.

Adequate, convenient, and sanitary welfare facilities are often not available in the market. Many that are available lack proper ventilation, lighting, and equipment. Public restrooms are not available or are connected to a service station or restaurant in the area.

Waste, Spoilage, and Product Deterioration

Poor handling practices, improper stacking, crowding, and unnecessary handling, necessitated by inadequate facilities, cause food products to be exposed to unsuitable temperatures. Such practices result in product deterioration, high trimming rates, product spoilage, and poor quality.

It is impossible to measure or estimate objectively the extent or severity of damage to the products arising from improper facilities. Many products do not deteriorate enough to be a complete loss, but the quality is reduced. Considerable amounts of products are sold at salvage prices, especially fruits and vegetables. In many cases, the extent of damage does not become apparent until the product reaches the retailer or the final consumer.

Lack of a Market Authority[11]

The presence of an industry association helps tremendously in the regulation of the various segments of the wholesale markets. The South Water Market Service Association is an excellent example of such a group, which acts in the interest of the operators in the South Water Market. There are several associations of operators handling, processing, and marketing meat in some areas. Groups servicing the interests of all wholesale food operators are seriously lacking. As a result, the hours of operation for various commodities vary considerably. Itinerant labor often creates social problems as well as inefficiencies in the areas of operator concentration.

Market promotion and scheduling of services such as garbage collection, snow removal, street cleaning, and maintenance are often rendered inefficient by the continual activity that goes on in the markets. In the unregulated atmosphere that exists, it is difficult for the city to provide adequate fire protection, traffic control, assistance, and security.

Many of the food handling and marketing facilities are located in urban renewal and other development areas of the city. A few have already been replaced by modern, well-planned facilities for other uses. Obviously, South Water Market and other areas face this possibility in the immediate future. Redevelopment of many of the areas will assure that the real property is used in a more economic way.

As marketing technology advances, the present market areas such as South Water Market, Fulton-Randolph Market, the Stockyards, and other inefficient facilities throughout the city and surrounding areas will be facing competition that is highly efficient and aggressive.

The results--loss of buyers, increased direct marketing by producers, and decreased competitive advantages of wholesale operators--will tend to be magnified for those operators who maintain their present inefficiencies. Handling costs, in the aggregate, are to high in Chicago and are reflected in higher prices to consumers and lower prices to producers.

Results of the Defects

Due to traffic congestion, limited entrances and exits, inadequacies of building design, and the lack of direct rail connections, adequate platforms, and a central, concentrated, and complete market in a single location, the cost of handling food is unnecessarily high. Handling costs for many wholesale markets throughout the United States are considerably less than those found in Chicago.

Insofar as possible, the remainder of this report will set forth ways and means of improving the marketing of food in Chicago to meet the future needs of consumers, wholesalers, and producers.

HOW THE WHOLESALE FOOD MARKETS CAN BE IMPROVED

The best solution to the many defects and changes that have occurred in marketing food is to build a complete new marketing facility that is organized, planned, and designed specifically for the wholesale handling of food.

Wholesale operators, the tenants of such a market, can reasonably anticipate

[11] Market authority, as used here, refers to a coordinating or other group acting in the interest of the markets and their operations.

reductions in their operating costs in facilities of a design, type, arrangement, and location that will provide for the efficient handling of food. The city of Chicago, wholesalers, retailers, producers, and consumers would all benefit from a modern, well-located market where wholesale food operations could be conducted in a single well-defined area. Reduced handling under the proper conditions would improve the maintenance of quality, as well as decrease the costs of moving food through wholesale channels.

The design and operation of a wholesale food distribution center should meet the needs of the present and provide flexibility to satisfy the needs of the future.

This section of the report outlines the points that must be considered in planning and constructing a new wholesale food distribution facility for the Chicago area. The kind and amount of facilities that would be required are described, based on the number of operators that could reasonably be expected to occupy them, together with the volume of food they handle. Acreage requirements and a layout of a food center are developed. The layout provides for the expansion of initial facilities and for the addition of new ones. Factors involved in selecting a site are discussed and several sites with sufficient acreage for a complete food distribution center are evaluated. Estimates are made of the initial investments required in land and buildings, and methods of financing and operation are described. The annual revenue required to finance and operate the center is computed, and from this figure estimated rentals are determined. Costs of handling food through the center are estimated and compared with the costs in present facilities. Savings and other benefits, where applicable, are indicated and discussed.

Planning a Food Distribution Center

The most important factors which must be considered in planning a food distribution center are: Completeness, adequacy of facilities, arrangement, location, land cost, management methods, financial arrangements, and design. A center planned and constructed without due consideration of one or more of the above could develop serious operating problems and fail to improve the efficiency of distributing food.

A food distribution center must be complete to best serve the industry and the public. Wholesale food operators providing all types of services and products should be accommodated at a single location. It should not be necessary for a buyer to visit several locations to purchase a complete line of products. All types of transportation should be available to transport products and employees to and from the market. Space should be available for all types of operators, ranging in size from the small independent to the large chain operation. Not all firms might wish to relocate immediately, as they may not have a need to, or they might have recently constructed improved facilities. In any case, space should be provided for the relocation and growth of all firms that might want to move into the area in the foreseeable future.

The facilities planned should be adequate to fill the needs of each type of wholesale operator. Operators who handle a large volume or conduct extensive processing require buildings different from those who handle small volumes or do little or no processing. The facilities should provide ample space for unloading, selling, display, storage, and other operations required to distribute food in a major metropolitan area. Each structure, because of the varied and rapid changes occurring in food wholesaling, should be designed so that it might be modified to meet future needs. Above all, the buildings should be simple and relatively inexpensive but constructed to withstand continued heavy usage.

Auxiliary facilities such as team tracks, house tracks, restaurants, public restrooms, and service facilities for motor vehicles are needed. Other space is needed for offices, banks, market management and operation, inspection services, brokers, barber shops, and other organizations or groups needing or having an interest in space on the market. Adequate parking should be available for vehicles of buyers, dealers, employees, and all others who need to be in the market.

In developing a wholesale food distribution center, special consideration should be given to arranging the facilities on a given site to maximize efficiency in the marketing functions. Facilities should be located so that operators handling the same commodity are near each other. This would facilitate transfers between operators. Firms catering to buyers who pick up supplies in their own trucks should be located in an area where they can serve their customers without interfering with normal and efficient traffic flow. Facilities such as refrigerated

warehouses, that are used by operators from all parts of the market, should be strategically located to serve the entire market.

In locating a market, several factors must be considered. Rail connections, although not as important as they were 50 years ago, are a necessity. The market area should be readily accessible to the major highways and arterial streets of the city. It should be near the center of distribution in order to minimize the cost of distributing food to retail and other outlets.

It is critical that sufficient land at reasonable prices be available. The advantages of land near the Loop area must be weighed against the lower cost of suburban real estate. High rentals required to amortize a high investment might offset any savings or advantage from improved facilities. Consideration should be given to the costs of acquisition and conditioning of the land to build. It is mandatory that sufficient acreage be acquired for expansion, as well as for the eventual relocation of operators that do not move immediately into the new center.

Sound management and financial planning are of utmost importance for the success of the market. The management is responsible for the orderly and timely development and enforcement of regulations and operating procedures to insure the proper functioning. The market should be operated at a minimum cost, without discrimination against any type of operator or buyer, form of transportation, or origin of shipment. Operators should be allowed the greatest degree of individual initiative consistent with good business practices in the market. The management should be strong enough to assist the industry in developing and enforcing health, fire, traffic, and other regulations.

The board of directors or other management group should have an interest in the financial success of the market. Shippers, consumers, transportation agencies, and other groups vitally concerned with the market should be represented.

Facilities and Acreage Needed

The facilities proposed in this report are based upon the volume of food handled by wholesale operators who would benefit by moving to new facilities, or who will be required to move because of urban renewal, redevelopment, or other public programs in the immediate future. The actual number of facilities constructed should be based upon space needed for the volume handled by responsible operators who actually sign firm leases. Caution is necessary to prevent overbuilding and to insure a high rate of occupancy.

A number of operators have new or modern facilities that are well located and would not benefit materially from moving. Facilities are not included for these firms, nor for firms that operated partly as retailers and who would lose their retail business if they moved. Facilities are not included for the four national chains, as they already occupy, for the most part, modern ones in peripheral areas.

To provide the flexibility required and to meet the needs of the operators that are expected to locate in new food distribution facilities, two basic types of buildings are proposed. One type would be occupied by a single operator that requires a large amount of space. The other type would be occupied by a number of operators requiring a smaller amount of space. Throughout the remainder of this report, these will be referred to as single-occupancy and multiple-occupancy buildings.

Single-occupancy buildings are proposed when space needs of an operator exceed 15,000 to 20,000 square feet of space, depending upon the type of operation. Firms handling an extremely large volume, or performing a specialized operation where a large amount of floor space is required, are usually best accommodated in single-occupancy buildings. These are usually designed to the specifications of the occupant, but should conform to a master plan. Operators requiring smaller amounts of space are usually best accommodated in multiple-occupancy buildings which combine the advantages of economy of construction and high versatility required in distributing and handling food. These buildings consist of rows of individual units joined together by common platforms with a single-level operating space and either a second floor or mezzanine for auxiliary uses such as offices, carton makeup, and light storage. Such structures provide the convenience required for the transfer of products between operators and for buyers who want to shop the market for their products. Details will be presented under separate discussions on each commodity.[12]

[12] Fish and seafood facilities are included so that a complete food market might be proposed. Costs of handling or benefits will not be discussed on fish and seafood products because of the lack of sufficient information.

TABLE 17.--Number of operators expected to relocate in improved wholesale food center and percentage of product handled and facilities required, Chicago, 1965[1]

Commodity group	Operators	Volume handled	Proportion of total volume[2]	Multiple-occupancy units	Single-occupancy buildings
	Number	Tons	Percent	Number	Number
Fruits and vegetables	135	1,080,810	78.8	299	1
Meat and meat products	232	1,270,586	76.0	363	--
Poultry	25	80,702	59.7	24	--
Butter, eggs, cheese	40	216,722	73.4	64	--
Frozen food	31	85,464	67.1	--	[3] 2
Groceries	69	742,935	50.4	182	9
Fish and seafood[4]	33	18,864	100.0	17	--
Total	565	3,496,083	70.0	949	12

[1] Based on total volumes handled including transfers in 1962.
[2] Excluding tonnage handled by 4 national food chain warehouses.
[3] Buildings for frozen food operators.
[4] Fish and seafood information supplied by the Bureau of Commercial Fisheries, U.S. Department of the Interior.

Facilities are planned for 565 wholesalers, or about 76 percent of all independent operators. These operators received slightly over 3 million tons of food products, or about half the total received in the city in 1962. Table 17 gives the number of operators and volumes involved in the proposed facilities. The following facilities will meet present requirements and the needs of the immediate future:

(1) 949 standard units in 40 multiple-occupancy buildings.[13]

(2) 10 single-occupancy buildings.

(3) 2 frozen-food buildings.

(4) Direct rail access to all buildings, with a house track capacity of at least 950 rail cars.

(5) Team tracks for 300 rail cars.

(6) Space for 8 restaurants and public restrooms (4 units and 4 second-floor areas have been allocated in the multiple-occupancy buildings).

(7) 490 offices for market management, brokers, service industries, and others desiring space in the market. (These are located on the second floor of the multiple-occupancy buildings.)

(8) Paved streets at least 200 feet wide where multiple-occupancy buildings face each other, and service or cross streets at least 50 feet wide where no parking is allowed.

(9) Parking areas for 4,000 cars and trucks.

(10) Expansion areas for present facilities as well as areas to permit the construction of additional facilities in the future for food wholesalers and service and allied industries.

The specific requirements for each commodity are discussed in the following sections.

Fruits and Vegetables

An analysis of the operations of the firms handling fruits and vegetables indicates that 135 of the 158 operators in Chicago would benefit from or have need for improved facilities. The remaining operators had facilities which were adequate for their operations or could not economically provide for improved facilities.

The facilities proposed for these operators include 12 multiple-occupancy buildings with a total of 299 units, an auction building, house tracks to accommodate 315 rail cars, and team tracks to handle 300 rail cars.

Each unit in the multiple-occupancy buildings for fruits and vegetables would be 25 feet wide, 72 feet deep, with platforms at both front and rear 14 feet deep, or overall dimensions of 25 by 100 feet.[14] Ceiling heights in the interior of each unit should be at least 20 feet. Platforms are continuous the length of the buildings, with the roof extending 6 feet beyond the edge of the

[13] The standard unit used throughout this report is 25 feet wide and 100 feet deep. The arrangement of platforms, mezzanines, and second floors varies between commodity groups, but the overall dimensions of the basic unit remain constant. Plans for a wider unit have been developed for some commodities, but the flexibility required, the number of operators, and volume of products handled indicate that a construction module of 25 feet is best suited to the needs in Chicago.

[14] All dimensions used in the remainder of this report are overall and include walls, etc.

front platform to protect loading and unloading operations in inclement weather. The roof covering the platforms should be constructed to provide clear loading and unloading areas. Steps should provide access at convenient intervals along the platforms.

Bumpers are provided on both front and rear platforms to protect the edges from damage by trucks being positioned. The front platform is at truckbed level, or about 45 inches, and the rear is about 10 inches higher to correspond to the floor height of refrigerated railroad cars.

Doors from the front platform leading into the building interior are 8 feet wide and operate overhead. A pedestrian access door is located to one side of it. The rear entrance has two 3-foot-wide double-acting doors.

To allow for flexibility, temporary waterproof partitions separate each unit or each group of units occupied by one operator. Each unit contains an office or light storage area on a mezzanine 14 feet deep and 25 feet wide over the front platform. Because of the wide variation in the needs of individual operators, coolers and freezers are not included in these units.[15] Refrigeration equipment could be located under the rear platform. Restroom facilities are provided on the mezzanine. All floors should have a nonskid surface and should slope to adequate drains. Platforms should slope slightly to the outside.

Interiors should be well lighted and sufficient electrical outlets provided to permit the use of electrical appliances and equipment.

Heat, where required, would be supplied by gas, electric, or oil unit blower-type heaters that would be installed and operated by the tenants. Controls for all utilities should be conveniently located.

Rails would be placed and set into the pavement at the rear platform of each building. If paving extends to the top of the rails, trucks can be loaded or unloaded at the rear of each building when the tracks are not occupied with rail cars, and cleaning is facilitated. Double tracks would provide extra capacity during peak periods and the extra track could be used to unload directly from rail cars to motor vehicles.

Multiple-occupancy facilities will adequately take care of all the needs of the operators except the auction company. A building 100 by 400 feet is proposed for this operation. The design of this building is similar to that of the multiple-occupancy buildings and could be converted to such use in the event the volume of business declines to the point that the auction is not a feasible operation. It also would be served by double rail tracks.

A layout of a typical fruit and vegetable unit is shown in figure 16.

Each unit would contain a total of 2,850 square feet of which 2,500 square feet would be first-floor area and 350 square feet would be mezzanine area. A total of 700 square feet of platform space is included in the first-floor area.

The 299 units proposed for the fruit and vegetable operators would contain 852,150 square feet of space of which 747,500 square feet would be first-floor space and 104,650 square feet would be mezzanine. In addition, the proposed building for the auction would contain 40,000 square feet of first-floor area. The total area proposed for fruit and vegetable operators is 892,150 square feet, or 83.9 percent of the space which they occupied at the time of this study. The 135 operators that are proposed for the new facilities occupy a total of 1,063,195 square feet in their present facilities.

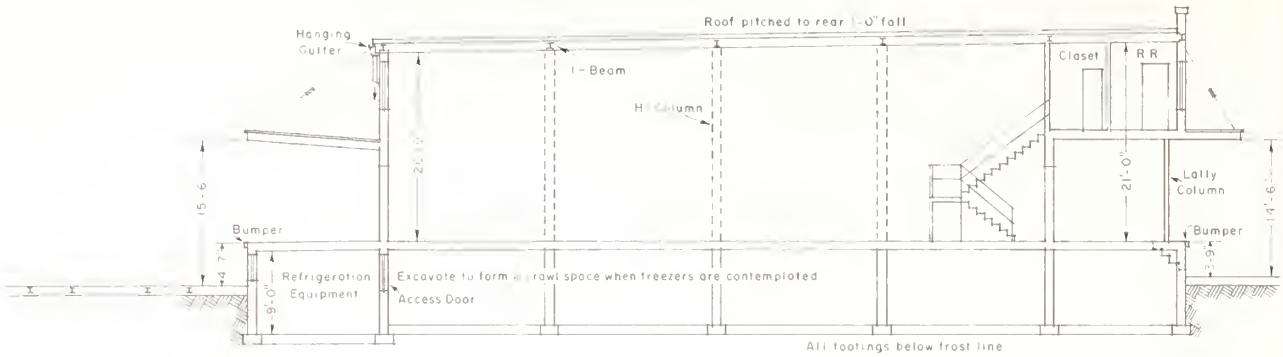
Meat and Meat Products

Facilities for 232 operators handling meat and meat products are provided in 15 multiple-occupancy buildings containing 363 units. These operators handle approximately 75 percent of the wholesale volume of meat and meat products handled in Chicago, excluding the four national chains.

Each multiple-occupancy unit is 25 feet wide and 100 feet deep, including platforms at the front and rear which are 14 feet deep. The entire enclosed area of the first floor of the unit should be designed so that it can be refrigerated. A second floor is provided to include space for offices, welfare rooms, dry storage, restaurants, and public restrooms. Space should be provided under the rear platform for the refrigeration equipment. Ceiling heights on the first floor should be 12 feet and on the second floor, 8 feet.

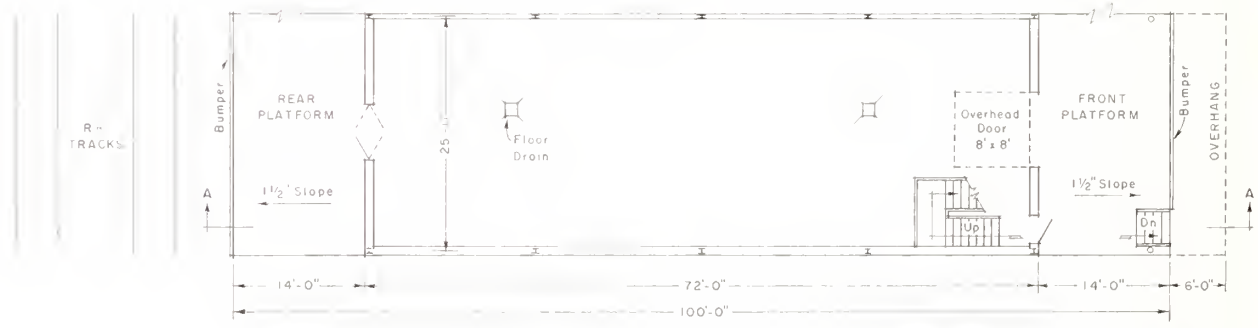
The front platform should be 45 inches above the street to correspond to the bed levels of trucks. The rear platform should be 55 inches above the street to correspond to the floor racks of refrigerator cars. Both platforms are continuous the length of the multiple-occupancy buildings. They

[15] A cooler with inside dimensions of 12 by 16 by 10.5 feet with 4-inch insulation and refrigeration equipment would cost about $4,000. Masonry shell and concrete wearing floor would be additional. This area would have a capacity of about one carload of fruits and vegetables.



SECTION A-A

MEZZANINE PLAN



FIRST FLOOR PLAN

Scale of Feet
0 5 10

FIGURE 16.--A typical layout of a unit for handling fruits and vegetables, poultry, or butter, eggs, and cheese.

slope to the outside to provide drainage. The front platform is provided with a roof with a 6-foot overhang to protect workers during inclement weather. Both platforms are equipped with two continuous meat rails the length of each multiple-occupancy building occupied by meat operators. The rails should be placed 7 feet, 6 inches from the floor, and switches should be installed at each store unit. This would permit loading and unloading at any point along the platform and provide an efficient and convenient way to transfer meat between operators. Bumpers should be placed along the edges of the platforms to protect them from trucks being positioned. Convenient pedestrian accesses should be provided along the platforms.

Doors to the outside should be of a refrigerator type with double-acting doors just inside to permit easy entrance and exit.

To allow for individual operator expansion and changes within the buildings, temporary waterproofed and insulated partitions should be used to separate units or groups of units occupied by one operator. Store interiors should be well lighted and the controls for all utilities should be convenient. Electrical services should be sufficient for equipment and appliances that are used in handling meat.

Interior floors should be constructed either of vitrified brick of good quality, bonded with an acid-resistant waterproof mortar and laid on a waterproof base, or of dense, acid-resistant waterproof concrete. It is critical that all floors slope to drains, particularly where large amounts of water are likely to accumulate. A floor drain should be provided for every 400 square feet of floor space.

Construction should be such that the area on the first floor could be refrigerated without tearing out the floors. This can be accomplished by insulating the floor, providing heating coils, or any other method that would meet the city code requirements. The entire enclosed first-floor area should be insulated for 30° to 34° F. Refrigeration distribution systems should be suspended from the ceilings and have a capacity great enough to supply the needs of coolers and freezers.

Meat rail systems may be supported by the floors or suspended from the ceilings of the coolers. Interior meat rail systems and refrigeration equipment should be provided by the operator or tenants.

A hot water system in each unit should be sufficient to supply the needs of both welfare and cleaning. It should be capable of supplying the water at a temperature of at least 180° F. Firms requiring steam would supply their own equipment.

The second floor of the multiple-occupancy units for meat operators would contain an office and welfare area separated by a corridor from a storage area. The interior corridor would run the entire length of the second floor of each multiple-occupancy building.

Railroad tracks are at the rear of each building and would serve not only as house tracks, but as team tracks for meat operators. The track area would be paved to permit use by trucks and to facilitiate cleaning. House tracks would have a total capacity of 360 cars at any one time.

Each unit for meat, of the dimensions described, would contain 2,500 square feet of first floor and platforms and 1,800 square feet of second floor area, for a total of 4,300 square feet. A proposed layout of an individual unit in a multiple-occupancy building designed for wholesale meat operators is shown in figure 17.

The 363 units proposed for meat and meat products operators would contain a total of 1,560,900 square feet. Slightly less than a million square feet is first-floor area and 653,400 square feet is second-floor area. The 232 operators occupy 3,067,457 square feet in their present facilities and the amount provided is about 50 percent of this.

A number of operators would not want second-floor office and storage areas. This space might be subleased to others needing extra second-floor space or to allied interests such as banks, offices for telegraph companies, transportation firms, packaging suppliers, and others whose interests are compatible with the market. The sublease terms would be negotiated between the original lessor and anyone else who might desire to lease the space.

Four restaurants are planned for the second-floor areas, as the meat buildings are centrally located and easily accessible to employees in the other commodity groups.

The second floors of the multiple-occupancy buildings for meat should be so constructed that if it ever became desirable, they might be removed without extensive renovation to create at least a 20-foot-high ceiling.

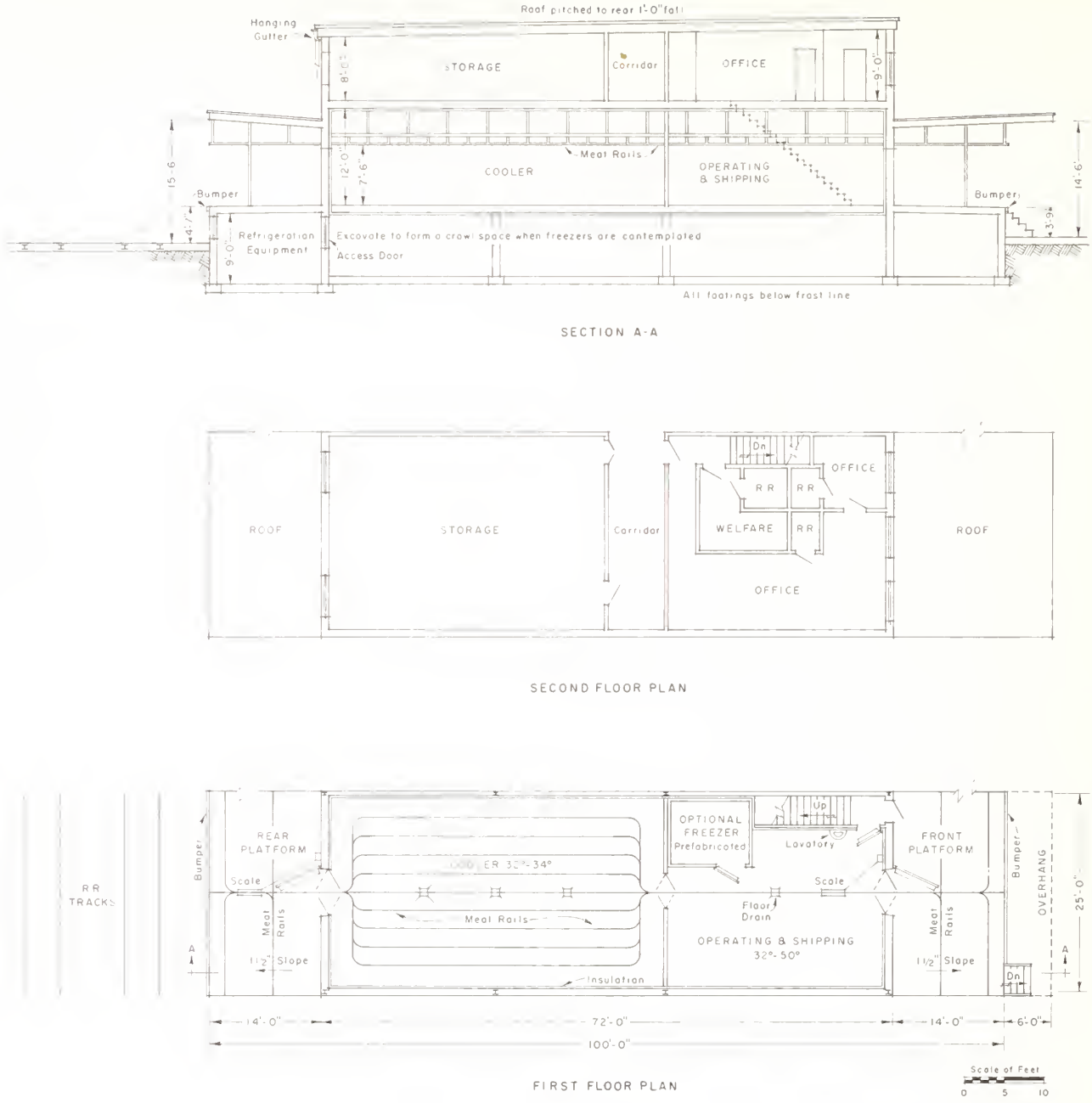


FIGURE 17.--A typical layout of a meat and meat products unit.

Poultry

A total of 25 operators handling about two-thirds of the poultry in the city would require 24 multiple-occupancy units to handle the volume of product marketed by the operators having a need for improved facilities. These units are planned for one multiple-occupancy building.

Each unit would be 25 feet wide and 100 feet deep, including a 14-foot-wide platform at both the front and rear. A width of 30 feet for these units is recommended in studies for some cities, but because of the relatively small number and the location within the facilities proposed for Chicago, a 25-foot unit is proposed. This smaller unit provides greater flexibility and more nearly satisfies the needs of each of the 25 operators handling poultry. A second-floor area would be provided over the front platform for offices and light storage.

Platforms are continuous the length of the building with the roof extending 6 feet beyond the front platform edge to protect loading and unloading operations in inclement weather. Columns supporting the platform roof should be placed where they interfere the least. Steps to the platforms should be provided at convenient locations.

Bumpers on both front and rear platforms protect the edges from damage by trucks. Both platforms are at truckbed level, or about 45 inches above the street. Rail tracks should be placed at the rear to handle the occasional rail car and to provide the necessary flexibility. The rear platform area should be paved to the top of the rails to permit trucks to be positioned at the rear platform and to facilitate cleaning. House tracks would have a capacity of about 20 cars at any one time.

Door arrangement and the interiors of the units to be used by poultry operators should be similar to those provided fruit and vegetable operators. The first floor of the facilities should be constructed so it could be insulated. The refrigeration equipment should be supplied by the tenant or occupant.

No layout is presented of the unit for poultry because of the similarity to the units proposed for fruits and vegetables and the relatively small number required. For a more detailed description and a layout, please refer to the previous section on fruits and vegetables.

The multiple-occupancy units would provide 60,000 square feet of first-floor space and 8,400 square feet of mezzanine space, or a total of 68,400 square feet. These operators currently occupy 266,810 square feet of space which is very poorly utilized. Each of the 24 units would contain 2,500 square feet of first-floor space, 350 square feet of mezzanine, and a total of 2,850 square feet, including platforms.

Butter, Eggs, and Cheese

A total of 64 units is planned for the 40 operators marketing about 216,000 tons of butter, eggs, and cheese. These units are placed in three multiple-occupancy buildings.

The units provided butter, egg, and cheese operators are similar to those proposed for fruits and vegetables. They are 25 feet wide and 100 feet deep, with platforms front and rear which are 14 feet wide and 45 and 55 inches above the street, respectively. The overhang extends 6 feet beyond the edge of the front platform. Both the front and rear platforms are equipped with bumpers to protect the edges. Accesses to the platforms for pedestrians should be conveniently placed. Double house tracks at the rear platform would accommodate 60 rail cars.

The second floor over the front platform would be used for office and welfare areas. The doors, front and rear, should be such that the entire facility could be refrigerated if necessary. Refrigeration equipment and insulation, except for the floors, should be provided by the tenants or occupants. Space for the mechanical equipment required for refrigeration is provided under the rear platform.

In separating the units of one operator from another, an insulated, waterproof panel wall should be used that could be removed if the need occurs. Floor drains should be provided to take care of water used in cleaning operations. For an overall layout of the unit, please refer to figure 16, the typical unit for fruits and vegetables.

The 64 units proposed for the butter, egg, and cheese operators would contain 160,000 square feet of first-floor area, including platforms, and 22,400 square feet of mezzanine area, a total area of 182,400 square feet. These operators currently occupy 588,505 square feet of space.

Frozen Foods

The volume of frozen foods handled by the 31 operators would require two buildings similar in design to the multiple-occupancy facilities proposed for other commodities, but with different dimensions. One of the structures would be 125 feet deep and 600 feet long to house small operators, and the other would be 175 feet deep and 550 feet long to accommodate the larger operators. All units would be 37.5 feet or multiples thereof. Each building would have an enclosed platform 14 feet deep at the rear and a front platform 20 feet deep at the front. Both platforms would be refrigerated to 45° F. The interiors of each building would have an order assembly area 20 or 25 feet deep, depending upon the overall depth of the building.

The interior storage area, which is freezer space and refrigerated to -10° F., would be 69 feet deep for the smaller building and 114 feet for the deeper building. Ceiling heights in both buildings would be 26 feet clear. An office area over the

front platform and a refrigeration equipment room under the floor of the rear platform would be included in both buildings. The buildings can be refrigerated individually or centrally.

Platforms will have overhead refrigerator doors with seals on each to minimize the heat gain. By controlling the temperature on the platforms, an entrance vestibule to the freezer area can be eliminated, heat gain reduced, condensation reduced, and thawing of frozen items prevented. The front platform will have a warming room, restroom, and space for battery chargers.

Such a structure permits several frozen-food operators to use an insulated cube and thus reduces the costs of construction and operation. Heaving of the floors would be prevented either by using a heating coil or by providing a heated crawl space under the floor insulation.

A cross section and layout of a unit in this specially designed building is shown in figure 18.

Costs of the insulation and building will be included in the cost estimates presented in a later section of this report. Refrigeration equipment cost is also included for these facilities.

In studies in other cities, common storage areas have been proposed, but in Chicago, because of the large size of operations, each operator will have individual freezer storage areas. This type of wholesaler in Chicago has grown, not only in volume handled, but in number and kinds of products inventoried. It is the most economical and practical way to provide these facilities, as most operators prefer to maintain their own inventory insofar as possible. The facilities proposed will permit this. Ceiling heights have been increased to permit the higher racking of products and to increase the total cube of the facilities. The newest facilities for frozen foods in the area are being designed with a 25-foot-high ceiling.

The two buildings for frozen foods would contain slightly less than 200,000 square feet and would replace about 525,000 square

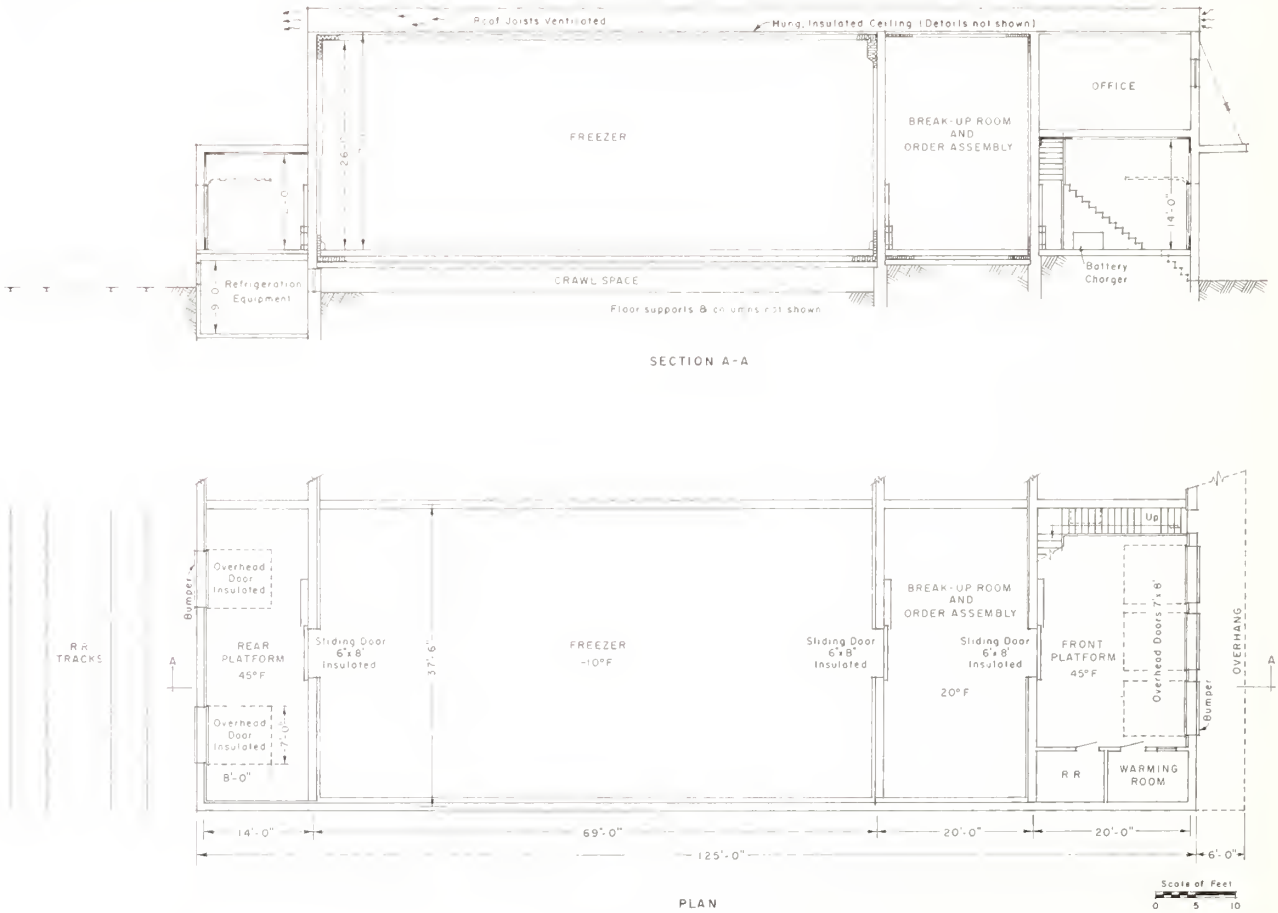


FIGURE 18.--A typical layout for a frozen food unit in the specially designed frozen food building.

feet of poorly designed and arranged space. Double house tracks at the rear of each building would accommodate 20 rail cars. The track area should be paved to the top of the rails to permit motor vehicles to use the rear platform and to facilitate cleaning.

Groceries

The 69 firms included in the plans for improving the marketing of groceries require 182 units in nine multiple-occupancy buildings and nine single-occupancy buildings.

Each unit in the multiple-occupancy buildings is 25 feet wide and 100 feet deep; however, it is expected that very few operators would occupy only a single unit. Most of the 60 operators that are proposed for these would require four units, or about 10,000 square feet of first-floor space. Some would require about 5,000 square feet, and a few would require 15,000 to 20,000 square feet. Grocery operators requiring over 20,000 square feet are provided individual buildings. Because of the predominance of operators requiring 10,000 square feet, a 25-foot unit is proposed in Chicago. A 30-foot unit has been proposed for some other cities, but for the above reasons and for simplicity, it has not been proposed for Chicago.

The depth of the building includes a rear platform 14 feet deep, 45 inches above the street, that extends the length of the building and is covered by a self-supporting roof. The rear entrance has an 8-foot-wide overhead door. Each unit contains a mezzanine 17 by 25 feet at the front for offices and restrooms. The area under the mezzanine is used for storage, order assembling, and order checking. There are two truck load-out doors at the front of each unit under the mezzanine. These doors are 45 inches above the street level and are 7 feet, 6 inches wide. Bumpers are attached below the door openings and along the edge of the rear platform. A 6-foot canopy is provided over the front loading area for protection of workers loading and unloading products in inclement weather.

In addition, there is a 3-foot-wide door at street level which opens on stairs leading to the mezzanine and provides pedestrian access to the truck-loading area on the first floor.

A suggested layout of a typical multiple-occupancy unit for grocery operators may be seen in figure 19.

Removable partitions should be used to separate units or groups of units occupied by each operator. The floors should be constructed of dustproof concrete with nonskid surfaces and should slope to drains. Utilities such as lighting, ventilation, heat, and their controls should be conveniently located.

Ceiling heights should be no less than 20 feet to utilize the cubage properly with pallet operations. Double parallel rail tracks are recessed in the pavement at the rear platform to permit trucks to load or unload.

Each store unit contains 2,500 square feet of first-floor and platform space and 425 square feet of second-floor space, for a total of 2,925 square feet per unit. The total space planned for multiple-occupancy facilities for groceries is 532,350 square feet.

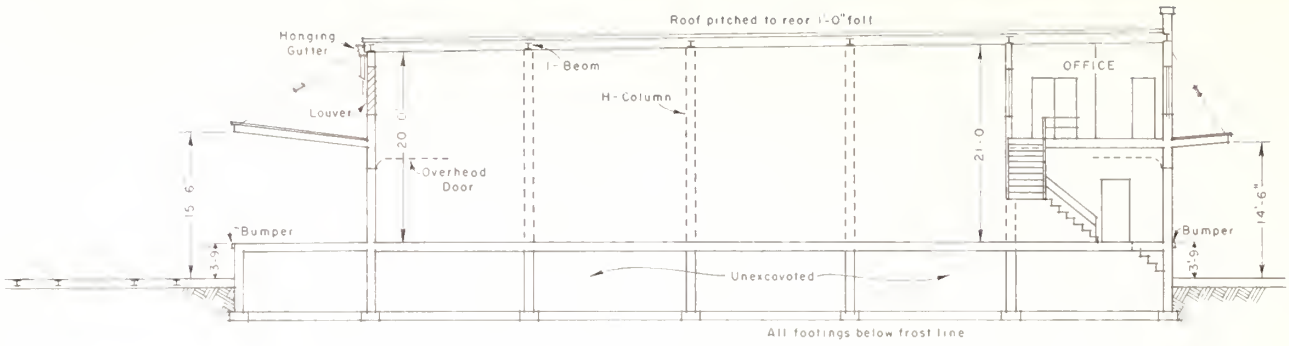
In addition, space is proposed in nine single-occupancy buildings ranging in size from 30,000 to 200,000 square feet of first-floor area. Five other single-occupancy buildings, besides the largest and smallest, include one each with 140,000, 84,000, 72,000, 50,000, and 40,000 square feet and two with 36,000 square feet. The nine single-occupancy buildings contain a total of 688,000 square feet. The total area proposed for all grocery operators that need space is 1,220,350 square feet, or about 28 acres of floor space. These operators currently occupy 2.3 million square feet of space.

The design of all single-occupancy grocery buildings should be at the discretion of the individual firms that will occupy them. The buildings should conform to the building, health, and sanitary codes, and the overall master plan for the area.

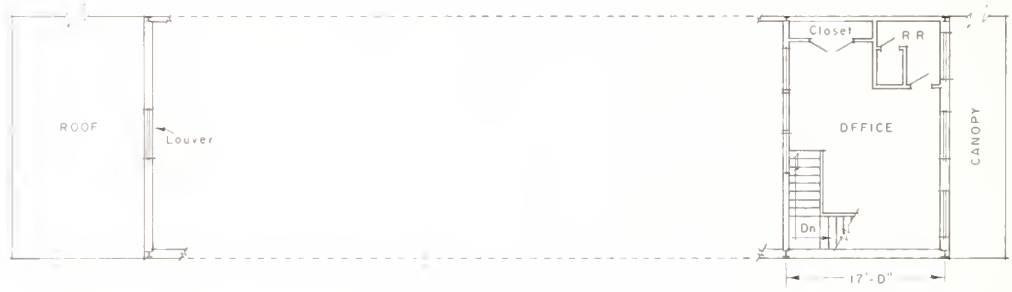
Fishery Products

One multiple-occupancy building with 17 units is proposed for the operators marketing fishery products. These firms handled about 19,000 tons of products in 1962.

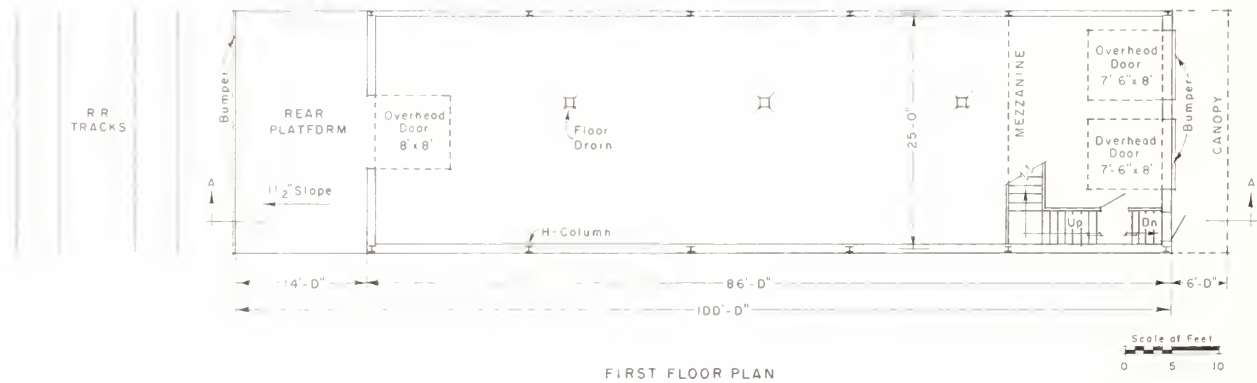
Each unit should be 25 feet wide and 100 feet deep, including both front and rear platforms 14 feet wide and 45 inches above the street at the front and 55 inches above the rail tracks at the rear. The ceiling height should be at least 20 feet to allow a pallet operation. The mezzanine, as in the other units, should extend over the 14-foot front platform of the building. A single rail track would be sufficient for this building, but because the tracks serve as lead-in tracks



SECTION A-A



MEZZANINE PLAN



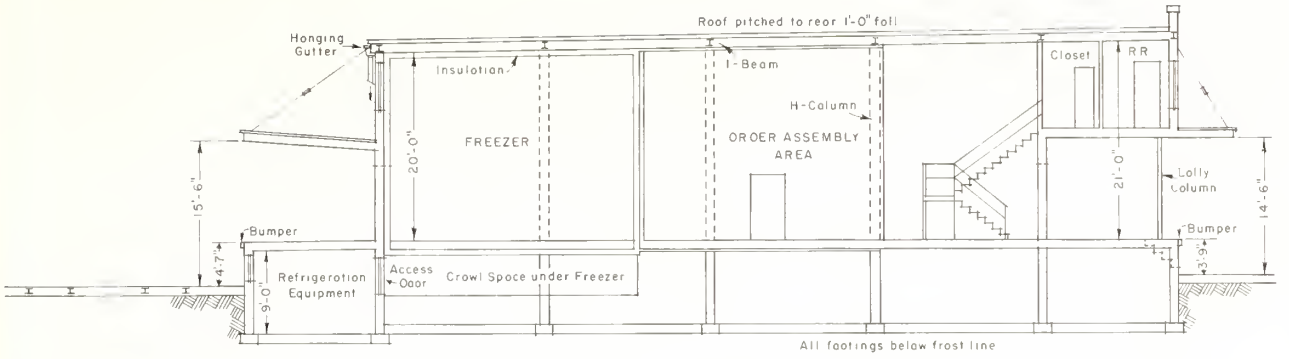
FIRST FLOOR PLAN

FIGURE 19.--A typical layout for a grocery unit.

to other buildings, a double track is proposed with a capacity of about 10 rail cars.

Particular attention must be given to the slope of the floor and location and size of the drains because of the large volume of water used in handling fish. Other features would be identical to those proposed for units handling other commodities. Space for the mechanical equipment required for refrigeration would be provided under the rear platform. A layout of a unit for handling fishery products may be seen in figure 20.

Each of the units would have 2,500 square feet of first-floor space and 350 square feet of mezzanine space, a total space of 2,850 square feet. The 17 units would contain 48,450 square feet of floor space.



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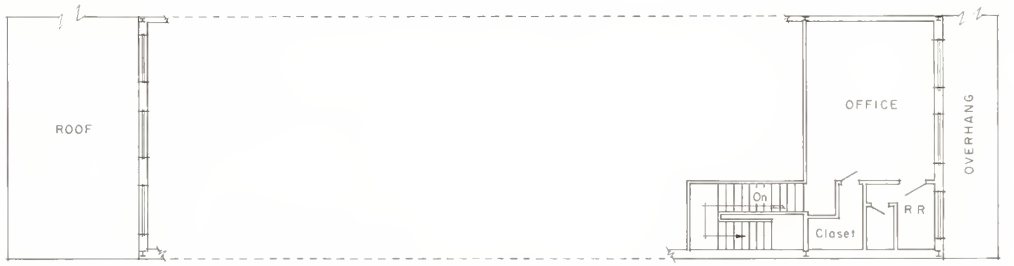
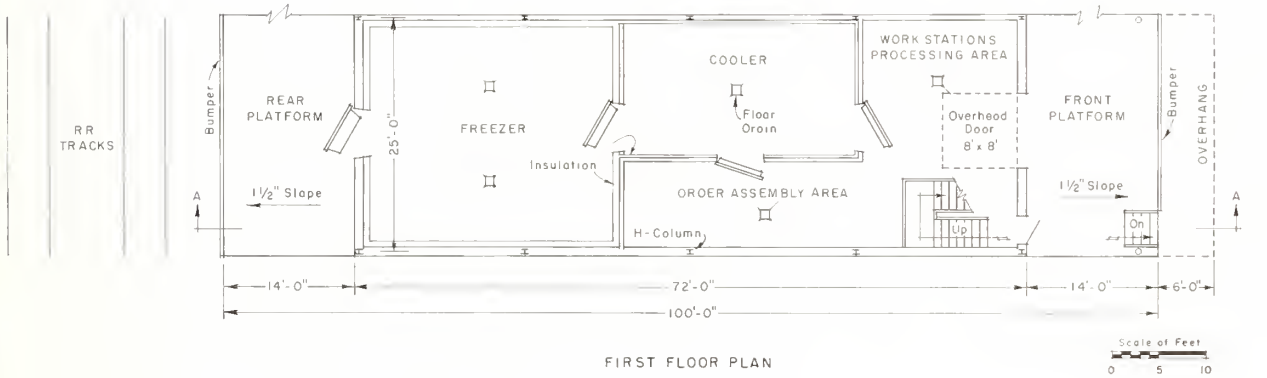


MEZZANINE PLAN



FIRST FLOOR PLAN

FIGURE 20.--A typical layout for a fishery products unit.

Auxiliary Facilities and Considerations

If a wholesale food market is to function as a separate entity, as it should, a number of facilities other than just buildings are required to insure an efficient operation. Streets, parking, rail facilities, expansion areas, restaurants, motor vehicle service stations, banks, office space, motels, public restrooms, and other service facilities are required within or nearby the market.

Streets and Parking Areas

All streets in the proposed market area should be wide enough for present and anticipated future use. They should be paved to carry heavy traffic and to facilitate

drainage away from the buildings. When buildings face each other, streets should be at least 200 feet wide to provide efficient traffic flow when semitrailers are positioned at platforms for loading and unloading. Streets behind buildings should be at least 150 feet wide, if parking or truck unloading is permitted at rear platforms. Cross streets 50 feet wide are adequate to facilitate traffic flow if parking is not allowed, but should be wider if parking is permitted.

Parking areas should be convenient to the buildings, but should not block the streets or loading and unloading areas. Areas designated for expansion should not be depended upon for parking. Parking areas should be as definite a part of the market as buildings and should have their own expansion areas. Some areas should be designated for parking for over-the-road vehicles only; others for automobiles and small trucks. All parking at platforms of buildings should be at 90-degree angles. At least 4,000 parking spaces are needed.

Railroad Facilities

Direct rail access should be provided to each building. Double house tracks, parallel to the rear platform, are planned for all buildings. The second track provides a convenient method of switching rail cars into and out of the unloading areas. Limited use of the second track as a team track could also be made in many areas.

In addition, a team track area which will handle 300 cars is provided for the use of fruit and vegetable operators and others that might have an occasional need for them.

Railroad tracks at the rear platform do not preclude its use for unloading trucks. In order to use the platform in this manner, and to facilitate cleaning the streets at the rear of the stores, the track area should be paved between and level with the tops of the rails.

Expansion Areas

In the selection of a market site, adequate land should be acquired for expansion of the facilities. In other cities where improved facilities have been constructed for handling and marketing food, operators not included in the preliminary plans have moved to the new market, and the orginal operators have needed additional space. No less than 10 percent expansion should be planned for, and most new markets have needed more than this. In addition, if the market is properly located, the real estate immediately adjacent to the market will eventually be put to use by firms allied to the food industry.

Restaurants, Additional Office Space, Public Restrooms, and Banks

Eight restaurants are provided in the proposed plan. Four of these are on the second floor of the multiple-occupancy buildings for meat in order to be convenient to the greatest number of employees and others in the market. Restaurant equipment and furnishings should be supplied by the tenants.

Two units in the fruit and vegetable area, one unit in the butter, egg, and cheese area, and one unit in the grocery area are also planned for restaurants.

Many firms and other interests allied to the food industry would be provided office space on the second floor of the multiple-occupancy buildings for meat. It is estimated that the second-floor storage areas in 150 units and the office areas in 50 units in the multiple-occupancy buildings for meat would be available for office use by allied interests, market administration, and others needing only office space in the proposed market. Tenants of the first floor would control the space above them and would sublease at their option. No firm or business obnoxious to the meat industry would be permitted on the second floor.

A building specifically designed for offices is not planned within the proposed market. Land should be available adjacent to the market if the location warrants an office building. It could be planned as a means of diversifying the investment, if the investors and management think this is desirable.

Public restrooms, as such, are not provided, as each unit is provided with restrooms, each restaurant is required to have restrooms, and the service stations usually provide these facilities. At the time final plans are developed, consideration should be given to constructing public restrooms either separately or under the units designated for restaurants. Public restroom areas often provide places where itinerant labor and others tend to loiter and create an undesirable situation within the market.

Banking facilities are an important allied interest. The second-floor areas of four units are proposed for use by banks. These

tenants would provide their own equipment and furnishings and would negotiate leases with the first-floor tenants. Banks should be near restaurants.

Motels and Service Stations

No motel or hotel is proposed in the market. If they are needed, private interests outside the market should be encouraged to provide these services.

Most markets have found that oil companies are willing to plan and construct under long-term leases facilities for servicing motor vehicles. Two areas are provided where this can be effected in the proposed market.

Arrangement of Facilities

The arrangement of the buildings and other facilities in a food distribution center will depend upon the physical characteristics of the sites selected. The location of existing and proposed traffic arteries and access by rail are important factors to be considered. It is most important that a master plan be adopted at the outset so orderly development can be maintained.

The facilities that have a common interest should be grouped together. For instance, meat operators should be placed in a contiguous area; the same is true for other commodities. The grouping of facilities by commodity permits each commodity group to maintain efficient operations within its own section and within the framework of the entire market.

Multiple-occupancy buildings are placed in one section because operators in these facilities cater to buyers and others who need to visit numerous firms. They can easily visit stores in one commodity group, load or unload trucks, and move to other commodity groups. Operators merchandising the same commodities can make transfers of product efficiently when necessary.

Single-occupancy buildings are located so that they are within their commodity groups, but away from the heavy traffic usually associated with multiple-occupancy buildings. Single-occupancy buildings are generally used by large volume wholesalers or processors who do not cater to shoppers. These buildings should be located near entrances to the market.

Service stations, restaurants, and other service facilities should be located where they are easily accessible. For instance, facilities used by watchmen should be near the main or primary entrances so that watchmen may provide an information service to truck operators and others arriving at the market to conduct business.

Commodity relationships should be considered wherever possible. Some groups are more compatible with one group than with others. Meat and meat products firms should be located adjacent to the poultry operators, and butter, egg, and cheese operators should be located near fruit and vegetable operators because of the similarity of the facilities occupied by each group. If the commodities are grouped in this manner, a desirable degree of flexibility is built into the market.

Expansion areas for each commodity group should be available, as well as for each individual or single-occupancy building. When facilities for allied industry are planned, care should be exercised to insure expansion areas for these firms. Facilities should be arranged so that traffic is not concentrated in a single area, but distributed as evenly as possible throughout the entire market.

Streets should be wide enough to handle the volume of traffic. Between rows of multiple-occupancy buildings streets should be at least 200 feet wide to provide for the free flow of vehicles even when trailers are positioned at the platforms. Side streets should be at least 50 feet wide where parking is not permitted and wider if parking is permitted on them.

Railroad tracks should be placed at each building so products can be unloaded directly from railroad cars into the facilities, to eliminate as much double handling of product as possible. Double tracks are provided at the rear of each facility; the track nearest the building would serve as a house track, and the outer track would serve as a switching track or for unloading into buildings or trucks. In some cases the second track would function as a team track.

Parking should be situated to minimize the distance pedestrians must walk to reach the individual places of business. For this reason, parking is provided both front and rear of all the buildings.

Acreage Required

All groups of buildings occupied by each commodity group should have space for expansion; however, it is not always possible

to provide space for every building, especially in a market as large as Chicago. Care should be exercised to insure space for expansion of the multiple-occupancy building of each commodity group and all single-occupancy buildings in the market so that the problems caused by the inadequate space in the present market areas do not reoccur. Expansion areas should not be encroached upon for parking and streets. An area sufficient for buildings, streets, parking, and railroad tracks to handle the present volume and a reasonable increase would require a site of at least 435 acres.

In addition to the wholesale food operators, a number of other businesses allied to food wholesaling may wish to relocate in or near a food distribution center. These might include soft drink bottlers, bakeries, and fresh milk plants. To accommodate these firms, it is recommended that an additional 100 acres be acquired in the initial purchase. This would bring the total land required to 535 acres. All firms locating in the food distribution center should be compatible with the food industry. No nuisance industries should be permitted in the area.

Selecting a Site

Many individuals and groups are extremely interested in where an improved wholesale food distribution center might be located. The firms operating in the wholesale markets will be affected directly by costs, which obviously will change. Market employees will be affected by changes in their working conditions and transportation. Indirectly, other groups are interested, especially consumers, who in the long run will help pay for the market by their purchases of food products. Local producers, likewise, have an interest because changes in location could affect the cost of transporting products to the market. The municipalities involved would have an interest because of the effects that relocation might have on urban and industrial renewal plans, zoning, traffic control, street and highway planning, police and fire protection, and other services rendered by the city. Public service firms such as transportation agencies, utilities, and other service-oriented groups and firms are also due proper consideration.

In selecting a site for a food distribution center, the following factors must be considered:

(1) Convenience to retail and other outlets.
(2) Direction of population growth.
(3) Convenience to highway and rail transportation.
(4) Convenience to local and nearby producers.
(5) Adequate land at reasonable cost.
(6) Accessibility to utilities.
(7) Avoidance of nonmarket traffic.
(8) Land use, topography, shape of tract, air pollution.
(9) Number of owners.

Convenience to Outlets and Population Centers

About 40 percent of the 6.3 million tons of food products distributed in the study area went to retail stores, restaurants, hotels, institutions, and other outlets in the city of Chicago. About 37 percent was distributed to other Illinois outlets. Slightly over one-fifth was moved through the wholesale markets destined for outlets in Indiana and Wisconsin.

The center of distribution has not been plotted. Food shopping habits, except for food consumed away from home, are such that most consumers purchase their food relatively close by. In other cities where the center of distribution and the center of population have both been determined, no significant differences in the two points are noted, except in special situations. In addition, the relatively large volumes of food moving away from the immediate area would cause serious distortion in calculating the center of distribution. For these reasons, it is felt that the center of population of the study area is a more valid criterion for establishing the convenience of retail outlets in relation to a wholesale food distribution center.

The center of population for Chicago has shifted south and westward for the last 30 years. It has shifted from the intersection of South Paulina and West Flournoy, which is about 2.2 miles west of State Street and 0.2 mile south of Congress Expressway, to a point near the intersection of South Wood Street and West 13th Street. Figure 21 shows the location of the center of population in 1930, 1940, 1950, and 1960 for Chicago and the study area. In the nine-county area included in this study, the center of population in 1930 was centered near the intersection of South Leavitt and West 13th Street, or just at the northern

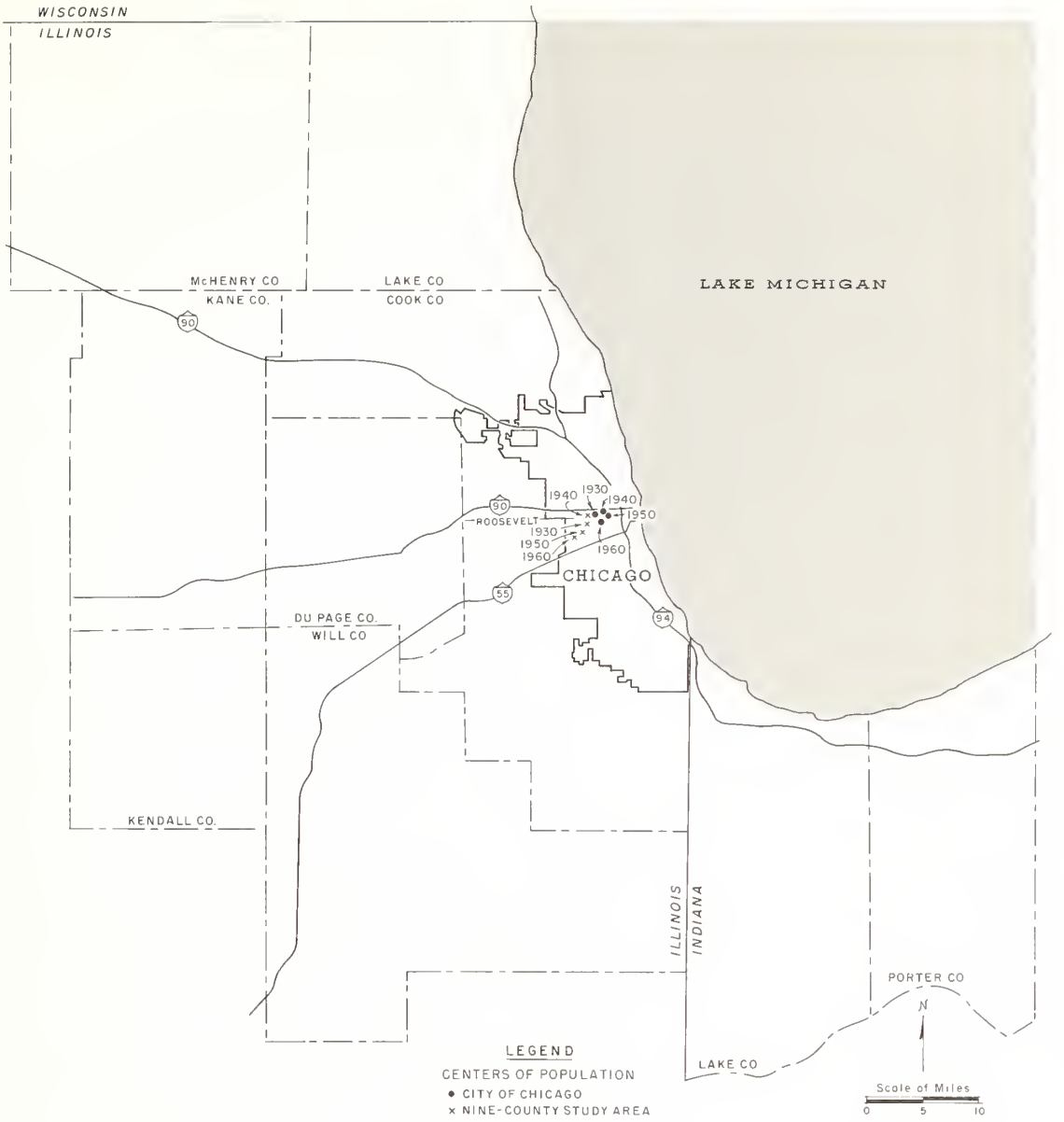


FIGURE 21.--Centers of population for Chicago and the study area, 1930-60.

boundary of the Wood Street Market terminal. By 1960, it had shifted south and west to a point near the intersections of Ogden Avenue, South Trumbull, and West 19th Street. The shifts in the center of population of both the city of Chicago and the study area have been south and westward.

Ideally, the market should be located as near as possible to the center of population of the study area if all the food distributed went to points within it. In Chicago it would not be economically feasible to develop this area as a complex food distribution center, but a site as close as possible to this area is desirable.

Because of the large amount of products moving to outlying areas, the direction of movement of these products is important when the location of the new market is being considered. In Chicago, there is an extremely heavy movement of products south and west of the study area.

Convenience to Transportation

The large volume of receipts in a food distribution center makes ready access to

expressways and railroad facilities a necessity. Both types of facilities are vital to a well functioning market, not only because of the use made of each, but for alternative transport if one type cannot be used because of weather or other factors.

The ideal site would have direct access to the interstate highway system or a system of connectors at least equal to this system. In addition, ready access should be available to the local street complex, especially in distributing products from the market. The Chicago area is well advanced in the development of its interstate system. The internal routes, such as Interstate 55, 90, 94, and 294 are also well advanced and provide an excellent network for motor vehicle freight movement.

Few cities in the world have a rail freight system equal to Chicago's. All of the Nation's major carriers maintain offices in the area and a large number maintain operating divisions in the city. In addition to the over-the-road carriers, an excellent system of connecting belt line railroads serve the Chicago district. In selecting the market site, consideration should be given the various switching limits, so that perishable and other products that arrive in the city by numerous carriers can be handled as expeditiously as possible. The time required by railroads to place a car at an operator's place of business upon arrival in the city should be held to a minimum. Shipments arriving in the city for various services should also be handled with a minimum of delay.

Air and water transport facilities are also necessary, but both are secondary to highway and rail transportation.

Convenience to Local Producers

There is no farmers' market, as such, in the city, although a sizable producer activity provides products to Chicago wholesale operators. These local producers rely upon motor vehicles to transport products to the wholesalers. Producers' cost of delivery should be considered in locating the wholesale market, but should not be the determining factor in the final market location because of the large volume received from other than local sources. The origin of most products is west and south of the city. During certain seasons products are received from Michigan producers, but even these arrive in the city from the south. Wisconsin producers also supply substantial amounts of some products during certain seasons, but in relationship to the total, the amount is small.

Adequate Land at Reasonable Cost

Availability of adequate land is a relative term when applied to site selection. It is possible under certain conditions to make almost any site or area available, but it is preferable to select a site that is for sale at a reasonable cost. Land availability and cost vary according to the nearness to the major business area. In Chicago, sites large enough to accommodate the wholesale food market decrease in number as the Loop area is approached, and prices per square foot increase. Price must be evaluated in respect to increased distribution costs.

If the nucleus of a site is available it might be acquired at the outset. However, in almost every city where a market has been constructed, the value of surrounding land has appreciated. If sufficient acreage is not acquired initially, real estate adjoining the site might price itself from consideration as a wholesale food market.

Accessibility to Utilities

Electricity, gas, water, and sanitary and storm sewer facilities should be sufficient for commercial service and close enough so that they would not be prohibitively expensive.

Avoidance of Nonmarket Traffic

Handling food products through wholesale facilities and distributing them to an area such as Chicago involves a large number of many kinds of motor vehicles. The routing of normal and necessary traffic, even in a well planned facility, can be a serious and complicated problem. If vehicles not related to market business move through the market area, traffic problems are even further complicated. Most food items coming into the city by motor vehicle have already been transported over a considerable distance, and a few extra miles on routes free of congestion will consume less time than travel by a somewhat shorter route in a highly congested area. The market should be located where there is little or no nonmarket traffic.

Land Use, Topography, Tract Shape and Zoning, Number of Owners

Current land use is very important in selecting a site for a new wholesale food center. Vacant areas large enough to accommodate this use are hard to find because most of the land has been developed for other purposes. In 1963 Chicago had only 14 square miles, or slightly over 9,000 acres, of vacant land (4). About three-fourths of the vacant land is south of 79th Street and two-thirds of it is concentrated in a 31-square-mile area of the city, of which the major portion is zoned for manufacturing.

The topography of the land could entail costs of filling, leveling, and other site preparation that would make some locations undesirable. The possibility of adapting the facilities to the topography of the site under consideration should be thoroughly investigated before making commitments to purchase or build.

Irregularly shaped sites may not only require more acreage than sites properly shaped, but may also prevent an orderly layout of facilities. This will increase the market cost, require higher rentals and charges, and inconvenience users of the market.

A food distribution center should be properly zoned so that the market and the surrounding property do not detract from each other's value.

The problems of acquiring a particular site will be reduced considerably if the entire site is owned by only one organization or a small number of entities.

Possible Sites

Preliminary investigation of possible sites revealed about 10 in the metropolitan area of a sufficient size. An analysis of all these sites is beyond the scope of this report; however, a cross section of available sites has been analyzed. The sites are designated as follows: (1) Calumet Harbor, (2) Lemont, (3) Midway, and (4) O'Hare. Each of these will be discussed separately. Sites were selected that would be representative of a number of conditions that might affect the costs of operation. The location of the four sites and rail and highway access to each are shown in figure 22.

Calumet Harbor

The Calumet Harbor site is about 12 miles south and east of the center of population of the city of Chicago and about 12.5 miles from the center of population of the metropolitan area. The site is well located in respect to the rail and highway transportation networks serving the city.

The site is in the southern portion of the city of Chicago and is a part of the Chicago Regional Port District of the Lake Calumet Harbor. It is bounded by the Calumet Expressway and Interstate 94 on the west, East 103d Street on the north, the New York Central and St. Louis Railroad and Chicago and Western Indiana Railroad on the east, and by Lake Calumet on the south. The site, of which about 300 acres is in condition to build, has been reclaimed and filled, and consolidation has already occurred; however, much of the load would have to be removed and placed on adjoining property to consolidate that. The site is a part of the property owned by the Regional Port Authority. The estimated cost used in this report for this site is 60 cents per square foot, or $26,136 per acre. The area at the present time is not occupied and is flat filled land which would not require extensive piling. All utilities are available.

This site can be served by at least two major railroads. Other major rail carriers would require switching agreements with one of these two railroads. Many of these agreements are already in effect.

Excellent limited access highways and connections to the interstate highway system are available to handle both inbound and outbound truck shipments. The site is adjacent to Interstate 90, which leads directly to the downtown area of the city to the north and to the interstate and tollway systems to the east, south, and west. Good alternate routes are available for incoming shipments and for local and area distribution.

Sufficient land for present and future needs is available at a reasonable cost. Air contamination and pollution in the area are quite severe, but substantial improvements are planned for the immediate future and it is expected that this problem will be solved by the time facilities are constructed.

Only a few food wholesalers are now located in this general area.

A possible arrangement of the facilities required to handle, market, and distribute the six groups of food commodities and fish is shown in figure 23.

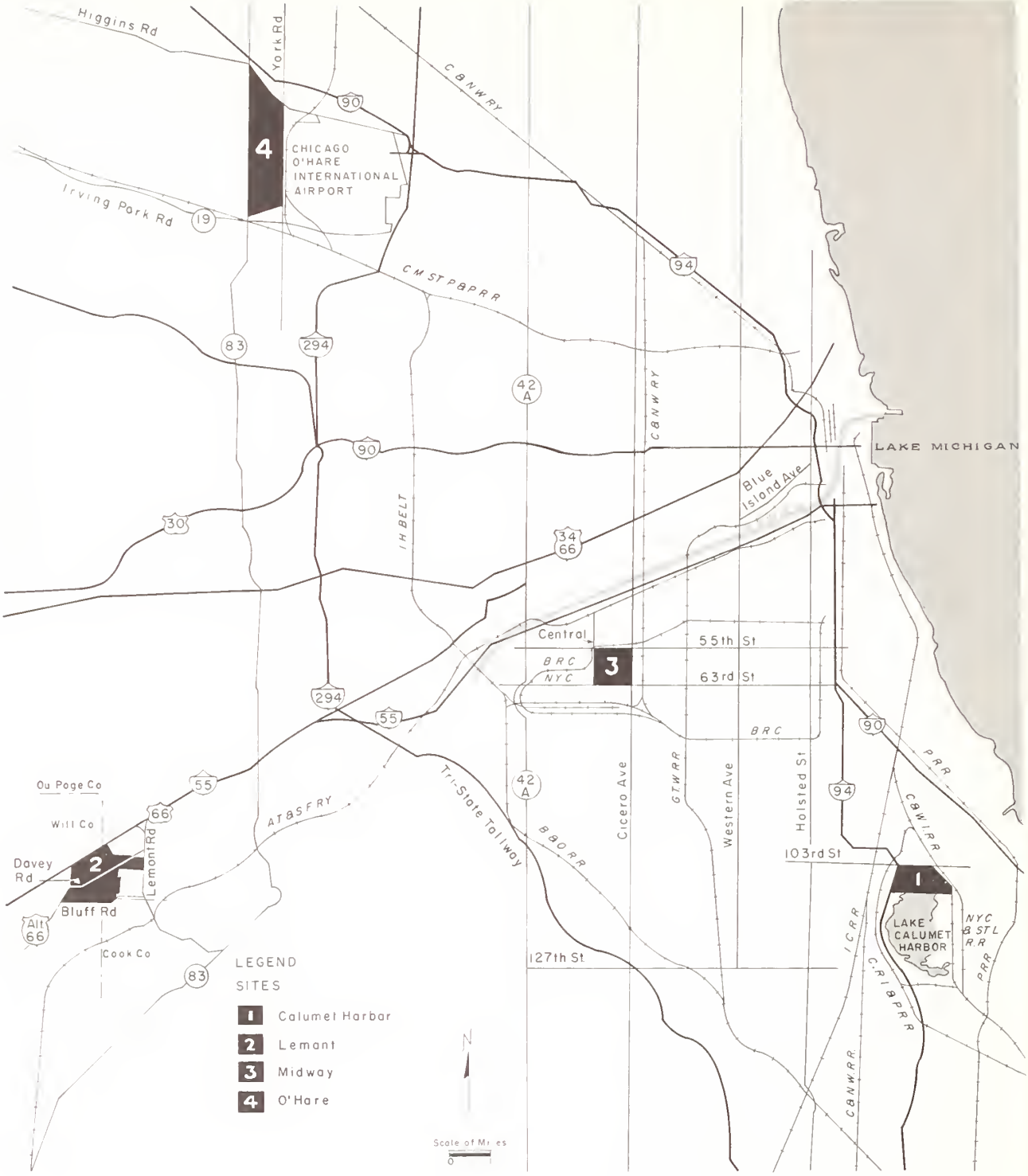


FIGURE 22.--Location of the four sites showing the major highway and railroad connections that would service each.

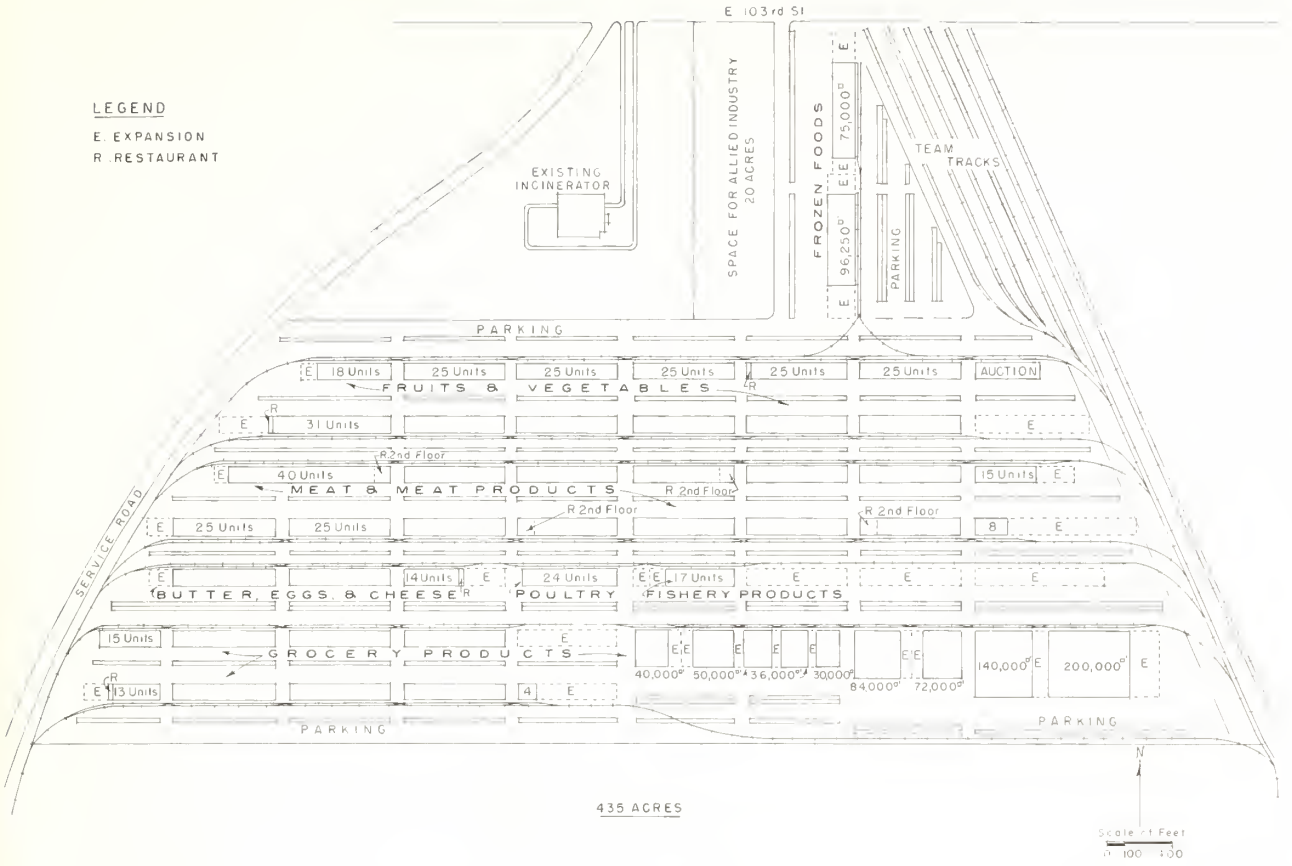


FIGURE 23.--A possible layout of facilities for a wholesale food distribution center on the Calumet site in Chicago.

Lemont

The Lemont site is farthest away from the center of population, but it is also the lowest cost site of those evaluated. It is 22 miles southwest of the center of population of the city of Chicago and about 20 miles from the center of population of the metropolitan area.

The site is in DuPage and Will Counties, just across the boundary of Cook County, near the suburb of Lemont. It joins the property of the Argonne National Laboratory. The site is bounded by Interstate 55 and Alternate U.S. 66, Lemont Road, and Davey Road. The exit from Interstate 55 is Lemont Road, which is about 6 miles southwest of the interchange of Interstate 55 and the tri-State tollway.

Approximately 960 acres are available at a cost of about $8,000 per acre in condition to build. Additional acreages nearby are obtainable for allied interest at reasonable costs. The site is a part of an industrial district being assembled and prepared by the Chanslor-Western Oil and Development Company, an affiliate of the Atchison, Topeka, and Santa Fe Railroad. This railroad would be the terminal carrier serving the site, which is outside the switching limits of Chicago. Agreements would be required for other carriers to get cars placed on the site.

The site is relatively undeveloped commercially, as it is gently rolling farm land. Some residential development has occurred near the intersection of Lemont Road and the expressway, but has not approached the boundaries of the site. The site has been zoned light industrial, which would be compatible with a food distribution center.

Air pollution and contamination from industrial emission would not be a problem in this area. Figure 24 shows a layout of the facilities required on the Lemont site. Not all utilities are on the site, but are available nearby.

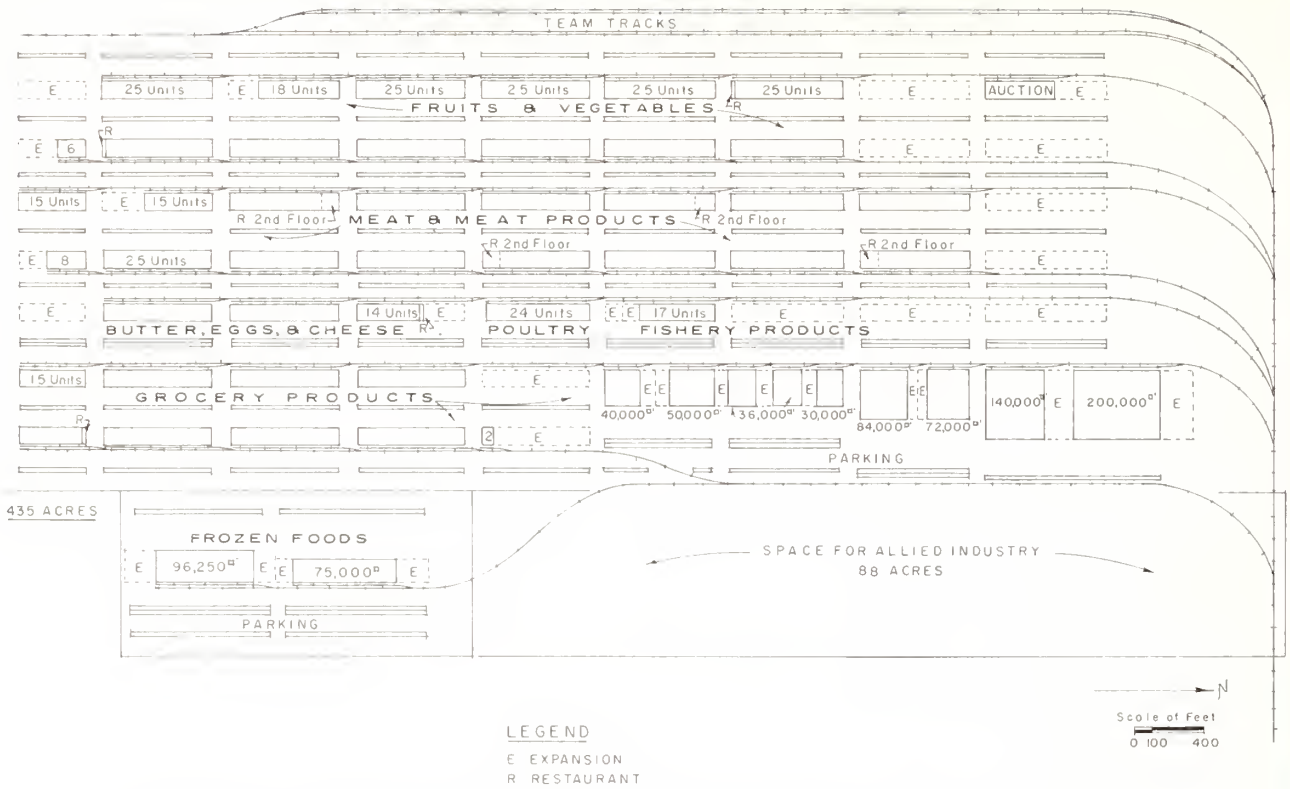


FIGURE 24.--A possible layout of facilities for a wholesale distribution center on the Lemont site, Chicago.

Midway

Although Midway Airport has been reactivated as an airport for commercial air traffic, there is reason to think that this operation might be discontinued for economic reasons. If it is, consideration as a site for a food distribution center should be paramount. Other sites in this area of the city are available or might be developed by either private or public interest, and the Midway site is representative of them.

The site is bounded by Cicero Avenue, 55th Street, Central Avenue, and 63d Street. It is about 1.5 miles south of Interstate 55, the nearest highway that provides access to the system of interstate and toll roads serving the area. Cicero Avenue is one of the major express streets in the city. The site contains approximately 640 acres. Limited space would be available nearby for additional development, but sizable areas, other than the primary site, would not be available at reasonable prices.

Rail transportation would be available by the Beltline Railroad and as a consequence, all railroads would have access to a market developed on this site. It is within the rail switching limits of Chicago.

On the basis of land values nearby and assessed valuation in the area, the Midway site would probably have a value of about $1.25 per square foot. The site is currently under public ownership. All utilities are available.

The site is flat and would require practically no conditioning before construction.

The site is just south and west of the Stockyards area. Limited wholesale food operations are scattered throughout the surrounding area.

This area is the closest of those discussed to the center of population of both the city and the metropolitan area. It is about 7 miles from the center of population of the city of Chicago and about 5 miles from the center of population of the metropolitan area. There is limited contamination of the air from industrial emissions, but it is not considered severe enough to cause immediate concern. The long-range aspects appear to be good, as the public is beginning to recognize and push for reduced air pollution. Figure 25 shows a possible layout of the facilities on the Midway site.

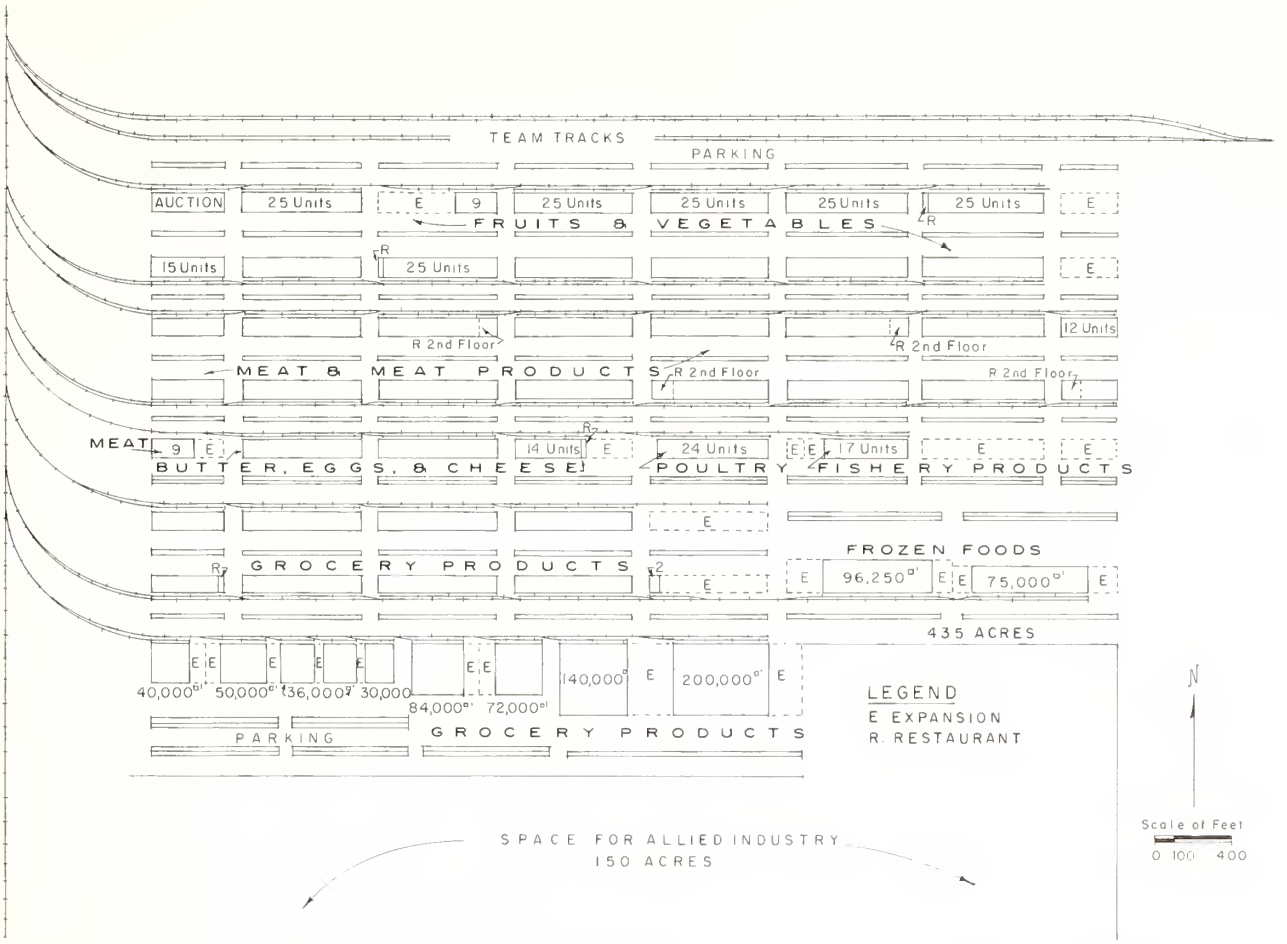


FIGURE 25.--A possible layout of facilities for a wholesale food distribution center on the Midway site in Chicago.

O'Hare

Industrial development around the O'Hare Airport has been intense since the opening of the airport to commercial traffic. It is expected that sites of a size capable of accommodating a food distribution center in this area will soon disappear, although there are several at the present time. Since low-lying industrial construction and utilization are necessary for the area, construction of the type needed for a food distribution center would be compatible with the overall development in the area.

The site consists of open farm land and contains 500 or more acres. It is bounded on the north by Higgins Road, on the east by York Road, on the south by Irving Park Road, and on the west by Illinois State Road 83. Land is available for allied and associated industries nearby at reasonable cost. Cost of the site in condition to build is about 50 cents per square foot, or $22,000 per acre.

Rail access to the site is rather limited, as only the Chicago, Milwaukee, St. Paul, and Pacific Railroad has direct connections to the site. Other railroads would have to effect agreements to obtain entry to the site. It is within the switching district of Chicago.

Highway access would be via Illinois 83 and 19, both of which are secondary roads. It is about 4 miles to the nearest entrance to the interstate and tollway systems serving the area. This would improve in the future with planned highway development in the area.

The site is 16 miles northwest of the center of population of Chicago and about 15 miles from the center of population of the metropolitan area. It is in the opposite direction from the direction of population growth. All utilities are available.

Very few wholesale food operators are located in the immediate area, as the entire area is being developed at the present time. A few are scattered in the adjoining areas where development has already occurred.

Industrial emissions into the air are relatively minor except for the carbon deposits from aircraft utilizing O'Hare Airport, which is close by. Figure 26 gives a layout of the facilities on the O'Hare site.

Summary of Sites

As indicated earlier, the four sites discussed herein are not by any means the only ones available for development as a food distribution center, but they are representative of the majority which are considered adequate for the present and long-range needs of the metropolitan area of Chicago. A summary of the four sites is given in table 18.

Each of the four sites has specific advantages. Two are in the city of Chicago and two are outside of Cook County. One of the sites offers low acquisition cost and one is in the opposite direction from population growth. Ownership of certain sites would be easier to obtain than others. Some sites offer convenience to local buyers, others to out-of-town buyers. All sites are served by rail and have good highway access. Some sites are outside the switching limits of the city, others are not. Zoning would not present a problem on any of the sites discussed.

It is beyond the scope of this report to recommend a specific site, and it should be pointed out that any of these sites could be developed into a food distribution center for Metropolitan Chicago.

Utilities would be available at each site; some sites do not have all the utilities required, but they are nearby.

There would be no problems with nonmarket traffic at any of the the four sites.

Estimated Investment Cost

The investment in a food distribution center is composed of two major elements, land and facilities. There can be a considerable variation in the cost because of differences in the price of land, amount of construction, and time of construction. The actual costs of facilities will be much

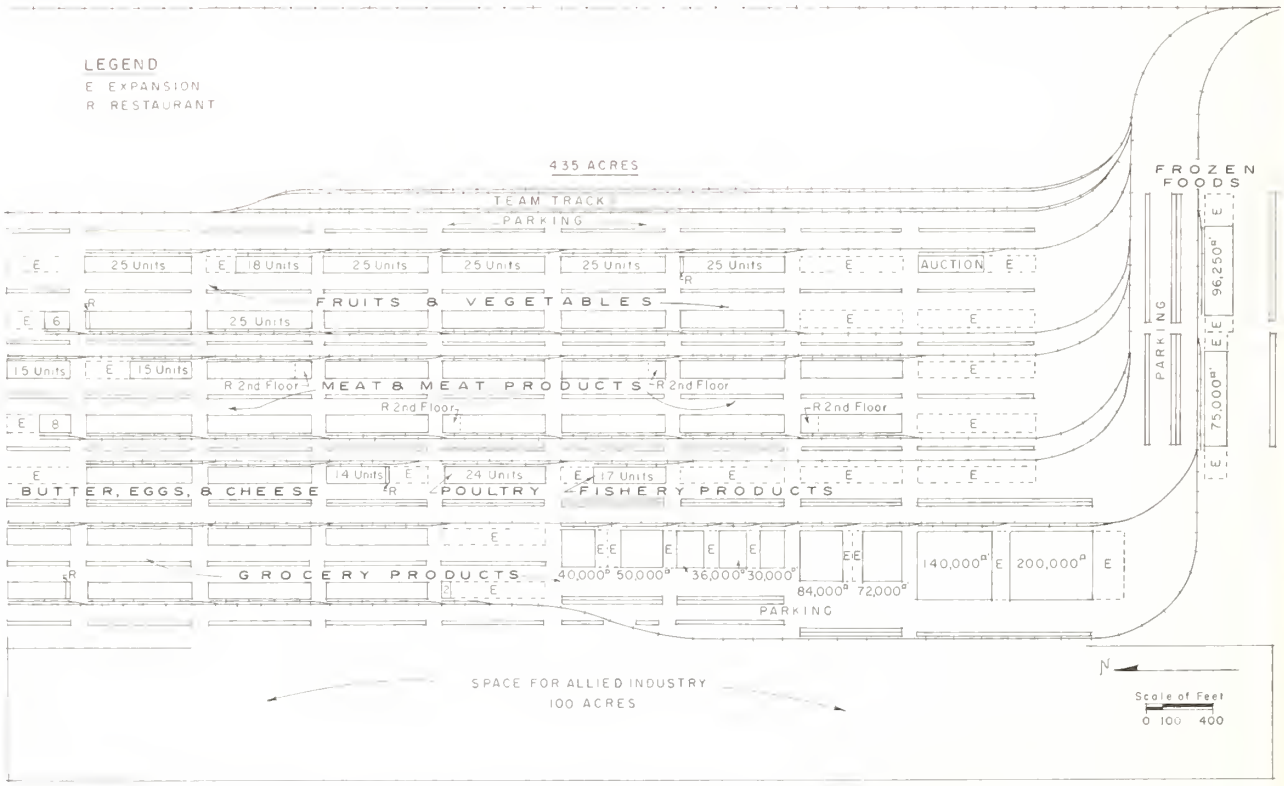


FIGURE 26.--A possible layout of facilities for a wholesale food distribution center on the O'Hare site in Chicago.

TABLE 18.--A comparison of 4 sites for a proposed wholesale food distribution center for Chicago

Item	Calumet Harbor	Lemont	Midway	O'Hare
Boundaries[1].....	On the north, 103d St. East, on the east, a complex of railroad tracks that serve the city, on the south, Calumet Lake, and on the west, Interstate 94.	On the north, U.S. 55 and Alternate U.S. 66, on the east, Lemont Rd., on the south, Buff Rd., and on the west, Joliet Rd.	On the north, 55th St., on the east, Cicero Ave., on the south, W. 63d St., and on the west, Central Ave.	On the north, Higgins Rd., on the east, York Rd., on the south, Irving Park Rd., and on the west, Illinois 83.
Land available.....	450 acres immediately with additional land available east and south through filling and consolidation.	960 acres immediately with additional land available south and west.	640 acres immediately.....	500 acres immediately with additional land north and west of site. Total site approximately 1,600 acres.
Estimated land cost.....	$0.60 per square foot.[2]	$0.184 per square foot.....	$1.25 per square foot[3].....	$0.505 per square foot.
Present land use.....	Vacant. Filling and reclamation in process.	Open farm land.....	Midway Airport.....	Open farm land.
Topography.....	Flat, filled, no great amount of piling required.	Rolling; no piling required...	Flat, airport runways.....	Flat to rolling countryside; no piling required.
Rail transportation.....	Served by 2 major railroads and within the switching limits of the city.	Served by the Atchison, Topeka, and Santa Fe and is outside the switching limits of the city.	Served by Beltline Railroad of Chicago and is within the switching limits of the city.	Spur track of the Chicago, Milwaukee, St. Paul and Pacific Railroad within switching limits of city.
Highway transportation..	Adjacent to Interstate 90 and about 2 miles west of Chicago Skyway.	Adjacent to Interstate 55 and U.S. Route 66.	Adjacent to Cicero Ave., about 1.5 miles south of Interstate 55 and 5 miles west of Interstate 90.	Approximately 4 miles from nearest entrance to Interstate and Tollway system via Illinois 83 and 19.
Convenience to other food wholesalers.	A few wholesalers located in the area.	Very few food wholesalers in the area.	A few food wholesalers are located in the area just south and west of the stockyards.	Very few food wholesalers and processors in area or nearby.
Convenience to centers of population.[4]	12 miles to center of population of Chicago and 12.5 miles to center of population of the study area.	22 miles to center of population of Chicago and 20 miles to center of population of the study area.	7 miles to center of population of Chicago and 5 miles to center of population of study area.	16 miles to center of population of Chicago and 15 miles to center of population of study area.
Air pollution.....	Industrial emissions of air contaminants. Substantial improvements are expected through regulation and enforcement.	Minimum contamination.....	Limited contamination, but not severe enough to cause concern.	Industrial emissions of air contaminants minimum. Carbon deposits from aircraft a potential problem.

[1] Boundaries vary slightly from those given because of irregularities in property lines, streets, and other markers.
[2] Based on present land valuations of moderately developed property.
[3] Based on land values around the area. Real estate immediately south is assessed at $0.75 per square foot. Tracts immediately north are assessed at $1.35 per square foot. The assessments are based on market value.
[4] Based on direct distances.

the same for all sites, but will vary slightly because of tract shape and size, and other topographical features of each. Land cost will vary depending upon the site.

Land

The cost of land consists of the actual cost of the real estate and the costs involved in getting it in condition to build. Table 19 gives a breakdown of the costs of acquiring and conditioning each of the four sites for construction.

Facilities

Costs of facilities are estimated on the basis of construction indexes for August 1965 and of costs of constructing similar facilities in other areas, estimates made by local engineers, and estimated costs of constructing similar facilities in Chicago. Cost estimates are for structures previously described. All buildings are of "light mill" type of construction.

Estimated costs for the multiple-occupancy buildings are for the completed buildings, and include in each unit: A mezzanine or second floor, stairway, toilets, lighting fixtures, sufficient electrical outlets, platform lighting, and outlets for installing heating equipment in the office and other areas where heat is required. They do not include office furnishings, equipment, or air conditioning, although provision should be made in order that individual tenants might install office air conditioning.

The estimates for single-occupancy buildings are for the completed structures, and include lighting and electrical fixtures, restrooms, and outlets for heating where required, but do not include any special provisions.

Paving estimates have been prorated for each commodity group to allocate a fair share of market street construction. Costs are based on a 7-inch gravel foundation, a 4-inch macadam base, and a 2-inch surface of asphaltic concrete. Consideration should be given to constructing a 60-foot-wide reinforced concrete apron adjacent to the platforms. Oil and gasoline drippings, which have a softening or dissolving effect upon asphalt, are concentrated in the platform areas where trucks are being positioned for unloading or loading. Consideration should also be given to using timber surfacing between the rail tracks in areas that trucks might also use.

Costs are included for sewers, floodlights, rail trackage, and other items concerned with individual commodities. All utilities are assumed to be located underground.

Other construction costs include architects' fees at 6 percent, construction loan at 5 percent, and contingency funds where required. The cost of the construction loan represents the total cost of the loan, and is not considered as an interest rate. CONSTRUCTION COSTS SHOWN IN THIS SECTION SHOULD BE USED ONLY AS A GUIDE IN ESTIMATING THE TOTAL COSTS OF THE MARKET. THEY ARE NOT INTENDED TO REPLACE FIRM ESTIMATES MADE BY LOCAL ARCHITECTS AND CONTRACTORS AT THE TIME OF CONSTRUCTION.

The following tabulation shows the estimated costs of facilities that would be needed on the Calumet site. Costs which are different on the other sites will be noted as they are discussed. All figures in this tabulation are rounded to the nearest thousand dollars.

TABLE 19.--Cost of 435 acres of land and conditioning cost for 4 possible sites for a wholesale food distribution center in Chicago, 1965[1]

Site	Cost of land per sq. ft.[2]	Cost of conditioning per sq. ft.	Average cost per acre	Total cost
	Dollars	Dollars	Dollars	1,000 dollars
Calumet Harbor...	0.600	0.103	30,623	13,320
Lemont.....	0.184	0.057	10,498	4,567
Midway.....	1.250	0.023	55,452	24,122
O'Hare.....	0.505	0.068	24,960	10,858

[1] Does not include land for allied or other interest that might require acreage near or adjacent to the market.
[2] Based on 1964 land costs.

Fruits and Vegetables

	Thousand dollars
Multiple-occupancy buildings:	
12 buildings containing 299 standard store units[1] 25 by 100 feet with 2d-floor offices 14 by 25 feet, or 2,850 square feet each, or 852,150 total square feet at $9.40 per square foot, or $26,790 per unit ----------	8,010

See footnotes at end of tabulation.

	Thousand dollars
Other facilities:	
Railroad--house and lead-in tracks, 14,900 linear feet at $12.50 per foot; switches, 6 single at $3,000 each and 10 double crossovers at $10,000 each	304
Paving--blacktop, 277,444 square yards at $4 per yard	1,110
Sewers--storm, 15-inch, 11,700 linear feet at $3.50 per foot; sanitary, 12-inch, 9,600 linear feet at $2.50 per foot	65
Floodlights--84 at $150 each	13
Total, construction costs of buildings and other facilities	9,502
Associated construction costs[2]	2,131
Total, buildings, other facilities, and associated construction costs	11,633
Land: 76.35 acres at $30,623 per acre	2,338
Total costs of construction and land	13,971
Auction facility:	
1 building 100 by 400 feet with 2d-floor areas 14 by 400 feet (unfurnished), or 40,000 square feet at $9.50 per square foot	380
Other facilities:	
Railroad--house and lead-in tracks, 800 linear feet at $12.50 per foot; switches, 1 single at $3,000 and 1 double crossover at $10,000	23
Paving--blacktop, 14,500 square yards at $4 per yard	58
Sewers--storm, 15-inch, 475 linear feet at $3.50 per foot; sanitary, 12-inch, 400 linear feet at $2.50 per foot	3
Floodlights--6 at $150 each	1
Total, construction costs of building and other facilities	465
Associated construction costs[2]	104
Total, building, other facilities, and associated construction costs	569
Land: 3.90 acres at $30,623 per acre	119
Total costs of construction and land	688
Team tracks area:	
Space for 300 rail cars--no buildings required.	

See footnotes at end of tabulation.

	Thousand dollars
Other facilities:	
Railroad--tracks, lead-in and team, 15,000 linear feet at $12.50 per foot; switches, 7 at $3,000 each	209
Paving--blacktop, 121,000 square yards at $4 per yard	484
Sewers--storm, 15-inch, 8,000 linear feet at $3.50 per foot	28
Floodlights--18 at $150 each	3
Total, construction costs of facilities	724
Associated construction costs[2]	162
Total, facilities and associated construction costs	886
Land: 25 acres at $30,623 per acre	766
Total costs of construction and land	1,652
Total costs of fruit and vegetable facilities	16,311

Meat and Meat Products

15 multiple-occupancy buildings containing 363 standard store units, 25 by 100 feet with 2d floors 25 by 72 feet, or 4,300 square feet each, or 1,560,900 total square feet at $7.27 per square foot, or $31,250 per unit	11,344
Additional finishing required for 4 restaurants on the 2d floor of 16 units--28,000 square feet at $3 per square foot[1]	84
Additional finishing for 79,750 square feet of office space on 2d floor at $3 per square foot	239
Insulation: 1st floor, 1,800 square feet at $6.71 per square foot of floor space, or $12,090 per unit	4,389
Other facilities:	
Railroad--house and lead-in tracks, 25,290 linear feet at $12.50 per foot; switches, 9 single at $3,000 each and 13 double crossovers at $10,000 each	473
Paving--blacktop, 200,000 square yards at $4 per yard	800
Sewers--storm, 15-inch, 12,800 linear feet at $3.50 per foot; sanitary, 12-inch, 10,600 linear feet at $2.50 per foot; and 320 grease traps at $300 each	170
Floodlights--104 at $150 each	16
Total construction costs of buildings and other facilities	17,515
Associated construction costs[2]	3,929
Total, buildings, other facilities, and associated construction costs	21,444

See footnotes at end of tabulation.

	Thousand dollars
Land: 102.39 acres at $30,623 per acre --	3,135
Total costs of construction and land ---	24,579

Poultry

1 multiple-occupancy building containing 24 standard store units 25 by 100 feet with 2d floor offices 14 by 25 feet, or 2,850 square feet each, or 68,400 total square feet at $9.40 per square foot, or $26,790 per unit	643
Other facilities:	
Railroad--house and lead-in tracks, 1,200 linear feet at $12.50 per foot; switches, 2 single at $3,000 each----------	21
Paving--blacktop, 22,089 square yards at $4 per yard ----------	88
Sewers--storm, 15-inch, 850 linear feet at $3.50 per foot; sanitary, 12-inch, 850 linear feet at $2.50 per foot -------	5
Floodlights--8 at $150 each---------	1
Total, construction costs of building and other facilities ----------	758
Associated construction costs[2] --------	170
Total, building, other facilities, and associated construction costs--------	928
Land: 6.17 acres at $30,623 per acre----	189
Total costs of construction and land ---	1,117

Butter, Eggs and Cheese

3 multiple-occupancy buildings containing 64 standard store units[1] 25 feet wide by 100 feet deep with 2d-floor offices 14 by 25 feet, or 2,850 square feet each, or 182,400 total square feet at $9.40 per square foot, or $26,790 per unit----------	1,715
Other facilities:	
Railroad--house and lead-in tracks, 4,700 linear feet at $12.50 per foot, switches, 3 single at $3,000 each and 2 double crossovers at $10,000 each--------	88
Paving--blacktop, 60,000 square yards at $4 per yard ----------	240
Sewers--storm, 15-inch, 2,250 linear feet at $3.50 per foot, sanitary, 12-inch, 2,250 linear feet at $2.50 per foot ---	14
Floodlights--18 at $150----------	3
Total, construction costs of building and other facilities ----------	2,060
Associated construction costs[2] --------	462
Total, buildings, other facilities, and associated construction costs ------	2,522
Land: 18.37 acres at $30,623 per acre---	563
Total costs of construction and land ---	3,085

See footnotes at end of tabulation.

Frozen Food

2 limited-purpose buildings, one 125 by 600 feet and one 175 by 550 feet and containing a total of 4,372,000 cubic feet (includes nonrefrigerated areas such as offices and engine rooms, and refrigerated areas such as platforms, cooler, and freezers) at $0.93 per cubic foot including insulation and refrigeration equipment--	4,079
Other facilities:	
Railroad--house and lead-in tracks, 3,550 linear feet at $12.50 per foot; switches, 3 single at $3,000 each and 1 double crossover at $10,000 each---------	63
Paving--blacktop, 100,000 square yards at $4 per yard ----------	400
Sewers--storm, 15-inch, 5,300 linear feet at $3.50 per foot; sanitary, 12-inch, 2,000 linear feet at $2.50 per foot ---	24
Floodlights--14 at $150 each --------	2
Total construction costs of buildings and other facilities----------	4,568
Associated construction costs[2] --------	1,025
Total, buildings, other facilities, and associated construction costs--------	5,593
Land: 27.50 acres at $30,623 per acre---	842
Total costs of construction and land ---	6,435

Grocery Products

Multiple-occupancy buildings:	
9 buildings containing 182 standard store units[1] 25 by 100 feet with 2d-floor offices 17 by 25 feet, or 2,925 square feet each, or 532,350 total square feet at $9.16 per square foot, or $26,790 per unit ----------	4,876
Other facilities:	
Railroad--house and lead-in tracks, 16,300 linear feet at $12.50 per foot; switches, 6 single at $3,000 each, 7 double crossovers at $10,000 each---	292
Paving--blacktop, 205,000 square yards at $4 per yard ----------	820
Sewers--storm, 15-inch, 6,550 linear feet at $3.50 per foot; sanitary, 12-inch, 5,850 linear feet at $2.50 per foot ---	38
Floodlights--54 at $150 each --------	8
Total, construction costs of buildings and other facilities ----------	6,034
Associated construction costs[2] --------	1,353
Total, buildings, other facilities, and associated construction costs -------	7,387

See footnotes at end of tabulation.

	Thousand dollars
Land: 57.16 acres at $30,623 per acre	1,750
Total costs of construction and land	9,137
Single-occupancy buildings:	
9 buildings--1 each 200 by 200 feet, 200 by 250 feet, 200 by 150 feet, 300 by 280 feet, 300 by 240 feet, 400 by 350 feet, 400 by 500 feet, and 2 buildings 200 by 180 feet, with 688,000 total square feet at $9.50 per square foot	6,536
Other facilities:	
Railroad--house and lead-in tracks, 9,300 linear feet at $12.50 per foot; switches, 11 single at $3,000 each and 6 double crossovers at $10,000 each	209
Paving--blacktop, 179,000 square yards at $4 per yard	716
Sewers--storm, 15-inch, 3,700 linear feet at $3.50 per foot; sanitary, 12-inch, 3,050 linear feet at $2.50 per foot	21
Floodlights--36 at $150 each	5
Total, construction costs of buildings and other facilities	7,487
Associated construction costs [2]	1,679
Total, buildings, other facilities, and associated construction costs	9,166
Land: 58.79 acres at $30,623 per acre	1,800
Total costs of construction	10,966
Total costs of facilities for grocery products	20,103
Fishery Products	
1 multiple-occupancy building containing 17 standard store units 25 by 100 feet with 2d-floor areas 14 by 25 feet, or 2,850 square feet each, or 48,450 total square feet at $9.40 per square foot and $26,790 per unit	455
Other facilities:	
Railroad--house and lead-in tracks, 850 linear feet at $12.50 per foot; switches, 2 single at $3,000 each	17
Paving--blacktop, 15,000 square yards at $4 per yard	60
Sewers--storm, 15-inch, 575 linear feet at $3.50 per foot; sanitary, 12-inch 550 linear feet at $2.50 per foot	3
Floodlights--4 at $150 each	1
Total, construction costs of building and other facilities	536
Associated construction costs [2]	120
Total, building, other facilities, and associated construction costs	656
Land: 4.37 acres at $30,623 per acre	134
Total costs of construction and land	790

[1] Two of these units in the fruit and vegetable section, one unit in the butter, egg, and cheese section, and one unit in the grocery section are proposed for use by restaurants. No finish is provided for first-floor stores designated for restaurants because of the varying needs of the occupants of these. The space for the four restaurants on the second floor of the meat buildings is finished because of the standard needs of the occupants of these.

[2] Includes the following:

(1) Architects' and engineers' fees--6 percent of the construction costs of buildings and other facilities.

(2) Costs of the construction loan--5 percent of the construction costs and architects' and engineers' fees.

(3) Contingency fund--10 percent of the construction costs, engineers' and architects' fees, and costs of the construction loan.

A summary of the estimated investment costs of land and facilities for each commodity group by type of facility is shown in table 20 for the Calumet Harbor site. These estimated costs total $74,104,000, of which $60,784,000 is for facilities and $13,320,000 for land. The costs for land include 55 acres that are planned for circumferential streets and allied industry. The total investment costs for land and facilities for the four sites previously described are shown in table 21. (Acquisition and conditioning costs for the 435 acres required for each site are shown in table 19.) Estimated costs for the facilities on the other sites are slightly lower than for Calumet Harbor because of more efficient arrangement of rail trackage and the use of less costly switches. The buildings proposed for each site are identical.

Methods of Financing and Operation

The success of a new wholesale food distribution center depends to a large extent upon the type of ownership and management, no matter how well it may have been designed, located, and constructed.

Regardless of who develops the market, producers, processors, transportation firms, wholesale operators, and consumers are all vitally concerned with its operation. Investors and public officials are

See footnotes at end of tabulation.

TABLE 20.--Summary of estimated investment costs of land and facilities for a wholesale food distribution center by commodity group and type of facility on the Calumet Harbor site, 1965

Commodity group and type of facility	Land[1]		Facilities	Total
	Acres	1,000 dollars	1,000 dollars	1,000 dollars
Fruit and vegetable:				
Multiple-occupancy	76.35	2,338	11,633	13,971
Auction facility	3.90	119	569	688
Team track area	25.00	766	886	1,652
Total	105.25	3,223	13,088	16,311
Meat and meat products:				
Multiple-occupancy	102.39	3,135	21,444	24,579
Poultry:				
Multiple-occupancy	6.17	189	928	1,117
Butter, eggs, and cheese:				
Multiple-occupancy	18.37	563	2,522	3,085
Frozen foods:				
Limited use	27.50	842	5,593	6,435
Grocery:				
Multiple-occupancy	57.16	1,750	7,387	9,137
Single-occupancy	58.79	1,800	9,166	10,966
Total	115.95	3,550	16,553	20,103
Fishery products:				
Multiple-occupancy	4.37	134	656	790
Total for planned facilities	380.00	11,636	60,784	72,420
Allied industry area	20.00	612	0	612
Circumferential street	35.00	1,072	0	1,072
Grand total	435.00	13,320	60,784	74,104

[1] Cost of land is based on $30,623 per acre.

TABLE 21.--Summary of estimated investment costs of land and facilities for a wholesale food distribution center at 4 sites, Chicago, 1965

Cost of land and facilities	Calumet Harbor	Lemont	Midway	O'Hare
	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars
Land	13,320	4,567	24,122	10,858
Facilities	[1] 60,784	60,441	60,441	60,441
Total	74,104	65,008	84,563	71,299

[1] Costs are slightly higher at Calumet Harbor because of arrangement of rail trackage and number and type of switches necessary; otherwise, facilities proposed at all sites are identical.

equally concerned. The investors, whether public or private funds are used, have a right to expect a reasonable return on their investment and assurance that their interest will be protected. It is desirable, therefore, that the board of directors or other management represent all groups concerned with the successful operation of the market.

It is extremely important that a new wholesale food distribution facility be designed and operated in a manner that will promote the future welfare of the industry. Certain safeguards should be provided, because the market should function as a public service facility. As the market becomes established as a going concern and as its income becomes dependable and reasonable returns to investors are being made, the reasons for precautions will be even more apparent.

Regardless of what agency, group, or interest constructs and finances the market, there should be definite assurances that: (1) It will be properly located, designed, and equipped, (2) construction of excess facilities or overbuilding will be prevented, (3) funds will be invested wisely to provide for real needs so that increased efficiency will not be offset by high rents, (4) facilities will be used in the best interest of the industry and the public, and (5) it will be operated without discrimination against any buyer, seller, method of transportation, or origin or destination of shipment.

The method selected to finance and operate the proposed market could materially affect the rents necessary to make the market self-sustaining. Many methods are available for financing such a project. Some of the forms are: (1) A private corporation for profit, (2) a private corporation not for profit, (3) a municipal authority, and (4) a State authority. Each of these methods could be used, but on some sites complicated arrangements would be necessary. For instance, an authority of the city of Chicago would have little interest in providing the financial requirements for a food distribution center located outside the city. Enabling and certain other legislation would be required to create a State authority to finance and operate the facilities. Other methods are discussed in Marketing Research Report No. 160, (5).

Financing and Operation by a Private Corporation

A private company could finance, construct, and operate a food distribution center on any site considered, either for profit or not for profit. The principles employed by this method and several of the complications that might be encountered, are similar to those of other methods. The revenue requirements for a privately developed wholesale market will be discussed under the following categories: (1) Costs of management, (2) insurance, maintenance, and repairs, (3) taxes, and (4) debt service. These requirements will be discussed for each site evaluated.

Costs of Management

The day-to-day operation of a wholesale food market requires competent management. Costs of management include salaries for a manager, an assistant, and a clerical and bookkeeping staff; legal and auditing services; office rentals; utilities for offices, corridors, and other public areas; travel and business expenses; advertising and promotion; office equipment and supplies; communications; and sanitation and security.

A contingency of about 10 percent is provided to take care of emergency and nonpredictable costs of management. After a sizable reserve has been accumulated, this might be discontinued.

The cost of management will be similar at all sites regardless of financial arrangements or what agency or group operates the market.

The annual management expenses for the proposed wholesale food distribution center are estimated as follows:

Market manager	$20,000
Assistant market manager	15,000
Secretary	6,000
Bookkeepers (2 at $7,500 each)	15,000
Legal and auditing services	10,000
Office rental (3,600 sq. ft. at $1.50)	5,400
Travel and business expense	5,000
Advertising and promotion	8,000
Office equipment and supplies	4,000
Communications (telephone, telegraph)	3,000
General market sanitation	30,000
Snow removal	20,000
Watchmen (6 at $6,000 each)	36,000
Utilities (management office and public areas)	15,000
Contingency (approximately 10 percent of management cost)	19,600
Total	212,000

Insurance, Maintenance, and Repairs

A corporation would need to insure all buildings for fire and extended coverage, and would need liability insurance. Insurance rates vary somewhat between the various sites, but the differences are very minor and will not be detailed in this report. Rates supplied by the Illinois Inspection and Rating Bureau indicate that a rate of about $0.87 per $1,000 valuation for fire and extended coverage for the type of construction proposed would be adequate. It is assumed that the structures would be insured for 80 percent of their value. Cost of public liability insurance is based on a number of factors and, in general, reflects the degree of hazard that might be expected. Insurance rates for bodily injury and property damage are based on a rate of $0.45 per 100 square feet of floor space in the proposed market.

The above rates are not applied to, nor do they include, any property of the tenants.

Maintenance and repairs were assumed to be 0.5 percent of facility cost. This figure is used because the type of construction is one which requires a relatively low level of maintenance. This rate was applied to all buildings and facilities, but not to the cost of land. To provide a reserve for increases in the costs of insurance, maintenance, and repairs, a contingency of 10 percent is included. A summary of the annual costs for these items appears in table 22.

TABLE 22.--Estimated annual costs of insurance, maintenance, and repairs for a food distribution center at 4 sites if operated and financed by a private corporation in Chicago, 1965

Item	Calumet Harbor	Lemont	Midway	O'Hare
Insurance:				
Fire and extended coverage[1].....	Dollars 42,300	Dollars 42,100	Dollars 42,100	Dollars 42,100
Liability[2]....	18,500	18,500	18,500	18,500
Maintenance and repairs[3].....	303,900	302,200	302,200	302,200
Contingency[4]....	36,500	36,300	36,300	36,300
Total.....	401,200	399,100	399,100	399,100

[1] Insurance based on 80 percent of cost of facilities (see table 21) and a rate of $0.87 per $1,000.
[2] Total liability insurance of $500,000 is based on an estimated space of 4.1 million square feet at a rate of $0.45 per year per 100 square feet.
[3] 0.5 percent of estimated cost of facilities (see table 21).
[4] 10 percent of the annual costs of insurance, maintenance, and repairs.

TABLE 23.--Estimated annual costs of taxes for a wholesale food distribution center at 4 sites if operated and financed by a private corporation in Chicago, 1965

Item	Calumet Harbor	Lemont	Midway	O'Hare
	Dollars	Dollars	Dollars	Dollars
Tax rate[1].....	53.36	34.54	53.20	39.60
	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars
Assessed value[2]...	74,104	65,008	84,563	71,299
Taxes.....	3,954	2,245	4,499	2,823
Contingency[3].....	395	225	450	282
Total taxes and contingency...	4,349	2,470	4,949	3,105

[1] 1962 rates per $1,000 valuation.
[2] Total investment assumed to be tax base.
[3] Based on 10 percent of taxes.

Real Estate Taxes

The third major expense in the operation of a wholesale food distribution center by a private firm would be taxes on the real property and improvements. The entire project could expect to pay taxes on the land, buildings, and other improvements at the current tax rate on the market value. The market value of the property is assumed to be the total investment costs in land and improvements. The rates used for the various sites are those that were in effect in 1962.

It is reasonable to expect that taxes will increase either through revised valuations or higher rates, or a combination of both. To take care of these increases, a contingency of 10 percent is included in the totals. Like the reserves set aside for other purposes, this might be discontinued if a sizable reserve has been accumulated. The estimated amounts of taxes to be paid annually by a private corporation on real property and improvements at the four sites are given in table 23.

Debt Service

The last major segment of cost that must be paid by a private corporation financing and operating a wholesale food distribution center is for debt service. If the market is to be self-liquidating, the investment must be repaid from revenue derived from the market operation. Certain standards for payment must be maintained. Facilities of the type proposed should not become obsolete in less than 30 years and very likely would be useful for a much longer period. The facilities proposed are of durable construction and with only minor alterations could be expanded or converted to use by several types of occupants.

A private corporation financing, constructing, and operating the distribution center would probably use at least three sources to obtain the necessary capital: (1) First mortgage, (2) second mortgage, and (3) equity capital. Because of fluctuations in the money market, various amounts at various interest rates might be obtained from each source. It is assumed that 65 percent might be obtained on a first mortgage, although, depending upon the time of financing, it might vary from 60 to 70 percent. The second mortgage is assumed to be 25 percent but might also vary as much as 5 percent each way. The remaining 10 percent would be equity capital which might also fluctuate. It is further assumed that a 65-percent first mortgage could be obtained for 5.5 percent, a 25-percent second mortgage could be obtained for 6.5 percent, and 10-percent equity capital would cost about 7.0 percent. Using the above estimates, a rate slightly less than 6.0 percent would result. These rates are for purposes of estimating the revenue required to finance the proposed market if operated by a private corporation. If the equity capital were supplied by the tenants in proportion to their share of the facility,

there would probably be no payments of dividends to stockholders, because of the tax situation. Under this assumption, the rate would be reduced to a little over 5 percent.

If stocks or bonds were issued, purchasers might demand that annual income exceed annual expenses by a stipulated amount and that this remain as a reserve. The exact amount required would vary according to the money market, the financial rating of the issue, and the nature of the collateral offered. Collections are proposed at the rate of 20 percent per year until the reserve covers one full year's amortization payment, after which it might be possible to discontinue this allowance. The computations in the following sections include a 20-percent contingency for this item.

The exact terms of obtaining financing cannot be known until a financial plan has been negotiated. However, in order to estimate the amount of annual rental necessary, a 6-percent interest rate has been used for a 30-year period. Table 24 shows the estimated annual cost of debt service to amortize the costs of a proposed food distribution center at four sites in Chicago.

TABLE 24.--Estimated annual costs of debt service for a wholesale food distribution center at 4 sites if operated and financed by a private corporation in Chicago, 1965

Item	Calumet Harbor	Lemont	Midway	O'Hare
	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars
Total investment costs[1]	74,104	65,008	84,563	71,299
Annual payments--principal and interest[2]	5,384	4,723	6,144	5,180
Contingency[3]	1,077	945	1,229	1,036
Total	6,461	5,668	7,373	6,216

[1] Includes land and improvements.
[2] Based on a rate of 6 percent over a 30-year period, or a cost of $72.65 per $1,000 per year.
[3] 20 percent of the above amortization costs.

Total Annual Revenue Required by a Private Corporation

The total amount of revenue required for a private corporation to finance and operate a wholesale food distribution center varies according to the site. The costs of management and the costs of constructing the facilities will remain about the same regardless of the site selected. Land costs will cause variation in the total revenue required, as will the tax rates that are applicable. The total annual costs for each site are as follows: Calumet Harbor, $11,423,000; Lemont, $8,749,000; Midway, $12,933,000; and O'Hare, $9,932,000. A summary of the four major cost categories is given in table 25. Total costs of private financing and operation for each site are prorated on the basis of total costs for each commodity group in table 26.

TABLE 25.--Estimated revenue required for a private corporation to finance and operate a wholesale food distribution center at 4 sites, Chicago, 1965

Cost item	Calumet Harbor	Lemont	Midway	O'Hare
	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars
Management	212	212	212	212
Insurance, maintenance, and repairs	401	399	399	399
Taxes	4,349	2,470	4,949	3,105
Debt service	6,461	5,668	7,373	6,216
Total	11,423	8,749	12,933	9,932

Financing and Operation by a Public Authority

The city of Chicago or the State of Illinois could establish an authority for the purpose of financing and operating a wholesale food distribution center in the Chicago metropolitan area, or it could be handled by one of the existing authorities. In either case, certain enabling legislation would be necessary; however, this is already in effect in respect to certain sites. The financial arrangement, the organization, and operation would be about the same in either case, and for this reason they are being discussed together.[16] For convenience, these

[16] In addition, the city of Chicago could construct and operate the wholesale distribution center through one of the established departments of the city government, using general obligation bonds backed by the credit of the city of Chicago. The resulting cost by this method would be similar to that under discussion here.

TABLE 26.--Estimated annual revenue required for a private corporation to finance and operate a wholesale food distribution center at 4 sites, by commodity group and type of facility, Chicago, 1965[1]

Commodity group and type of facility	Calumet Harbor	Lemont	Midway	O'Hare
	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars
Fruits and vegetables:				
Multiple-occupancy, including team tracks	2,464	1,887	2,790	2,143
Auction building	108	83	123	94
Total	2,572	1,970	2,913	2,237
Meat and meat products:				
Multiple-occupancy	3,876	2,970	4,389	3,371
Poultry:				
Multiple-occupancy	176	134	199	153
Butter, eggs, and cheese:				
Multiple-occupancy	487	373	551	423
Frozen foods:				
Limited-purpose	1,016	778	1,150	883
Groceries:				
Multiple-occupancy	1,441	1,104	1,632	1,253
Single-occupancy	1,730	1,325	1,958	1,503
Total	3,171	2,429	3,590	2,756
Fishery products:				
Multiple-occupancy	125	95	141	109
Total for proposed facilities	11,423	8,749	12,933	9,932

[1] Prorated on basis of investment in land and facilities by commodity group and type of facility.

methods of financing and operation will be referred to as an "authority."

Many of the cost items for a wholesale food distribution center will remain the same regardless of who finances and operates the facilities. These include construction costs, management, maintenance, and repairs. There would be minor differences in the insurance rates between sites, but these are insignificant. The two major items of cost that would be affected are taxes and debt service payments.

Taxes would not be assessed on the property of an authority; however, such an organization probably would make payments in lieu of taxes to the local government. In some instances, these payments would be based on the market value of the property involved and would equal the taxes that would be paid by a private corporation financing and operating the development. In others, payments would be a proportionate share of the taxes because certain services usually performed by the city would not be required. Tabulations in the remainder of this section will show a full payment and a 50-percent payment.

A major advantage in financing by an authority is that bonds would be exempt from municipal and State taxes. It is also assumed that the municipalities involved would guarantee payment of principal and interest; financing under this method would bear interest at a rate of 3.5 to 4.5 percent, depending upon the money market at the time the offerings are issued. The higher figure of 4.5 percent for a 30-year period is assumed in this report. As under private financing, a contingency of 20 percent of the annual costs of debt service is included. This could be discontinued after a full year's amortization costs are accumulated in reserve. Table 27 shows the annual costs of debt service and taxes for financing and operation by an authority. A reserve to take care of increases in taxes would not be necessary.

Total Annual Revenue Required by an Authority

The amount of revenue required to finance and operate a wholesale food distribution center by an authority with a full payment

TABLE 27.--Estimated annual costs of taxes and debt service for a wholesale food distribution center at 4 sites if operated and financed by an authority of Illinois or Chicago, 1965

Item	Calumet Harbor	Lemont	Midway	O'Hare
	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars
Total investment[1]	74,104	65,008	84,563	71,299
Debt service:				
Annual payments--principal and interest[2]	4,549	3,991	5,191	4,377
Contingency[3]	910	798	1,038	875
Total for debt service	5,459	4,789	6,229	5,252
Payments in lieu of taxes:				
Full payment	3,954	2,245	4,499	2,823
50-percent payment	1,977	1,123	2,250	1,412

[1] Includes land and improvements.
[2] Based on a rate of 4.5 percent over a 30-year period, or a cost of $61.39 per $1,000 per year.
[3] Based on a rate of 20 percent of the above amortization costs.

in lieu of taxes is $10,026,000 on the Calumet site, and $7,645,000, $11,339,000, and $8,686,000 on the Lemont, Midway, and O'Hare sites, respectively. Table 28 shows the amount of revenue required for each cost item for each site using an authority to finance and operate the facilities with a 50-percent payment in lieu of taxes. Table 29 shows the amount of revenue required by each commodity group to finance and operate the proposed facilities using a 50-percent payment in lieu of taxes.

TABLE 28.--Estimated revenue required for an authority to finance and operate a wholesale food distribution center at 4 sites, Chicago, 1965[1]

Cost item	Calumet Harbor	Lemont	Midway	O'Hare
	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars
Management	212	212	212	212
Insurance, maintenance, and repairs	401	399	399	399
Taxes[1]	1,977	1,123	2,250	1,412
Debt service	5,459	4,789	6,229	5,252
Total[2]	8,049	6,523	9,090	7,275

[1] Based on 50-percent payments in lieu of taxes.
[2] The totals, with a full payment in lieu of taxes, are $10,026, $7,645, $11,339, and $8,686 respectively.

Estimated Rental Charges

The major source of revenue for the proposed food distribution center should be the rents charged for the facilities, regardless of the type of financing and operation. Telephones, vending machines, and other concessions yield minor amounts of revenue but are mainly for the convenience of employees and are not considered here.

It should be noted that with private financing, the tenants could own their buildings at the end of 30 years, so rentals include a factor of investment. Under authority type of financing, the city or other public agency would own the market.

Some markets attempt to obtain revenue from rail and truck use fees. This practice, although apparently a necessity in some cases, should not be encouraged because one of the requirements for a sound and efficient market is free entrance and exit for all types of market traffic. The practice of charging use fees encourages direct shipments and oftentimes results in inefficiencies in the marketing system.

The suggested rentals required to finance and operate the proposed food distribution center on the four sites are shown in table 30.

A standard unit occupied by a fruit and vegetable operator would require an annual rental of $4,700 to $9,400, depending upon the site and type of financing. Annual rentals for other units are as follows: Meat, $6,300 to $12,200; poultry, $4,200 to $8,600; butter, eggs, and cheese, $4,500 to $8,700; grocery products, $4,600 to $9,000; and fishery products, $4,200 to $8,600.

TABLE 29.--Estimated annual revenue required for an authority to finance and operate a wholesale food distribution center at 4 sites, by commodity group and type of facilities in Chicago, 1965[1]

Commodity group and type of facility	Calumet Harbor	Lemont	Midway	O'Hare
	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars
Fruits and vegetables:				
Multiple-occupancy, including team tracks	1,735	1,407	1,960	1,569
Auction building	77	62	87	69
Total	1,812	1,469	2,047	1,638
Meat and meat products:				
Multiple-occupancy	2,731	2,214	3,085	2,469
Poultry:				
Multiple-occupancy	124	101	140	113
Butter, eggs, and cheese:				
Multiple-occupancy	343	277	387	310
Frozen foods:				
Limited-purpose	716	580	808	647
Groceries:				
Multiple-occupancy	1,016	823	1,147	918
Single-occupancy	1,219	988	1,377	1,101
Total	2,235	1,811	2,524	2,019
Fishery products:				
Multiple-occupancy	88	71	99	79
Total for proposed facilities	8,049	6,523	9,090	7,275

[1] Prorated on basis of investment in land and facilities by commodity group and type of facility.

Nonmeasurable Benefits

Many of the possible benefits of an improved wholesale food distribution facility cannot be measured in dollars. Such benefits as improved employee morale, better working conditions, shorter working hours, and improved environment greatly affect the cost of operation. Directly or indirectly, the resulting benefits accrue to and are shared by producers, wholesale operators, consumers, buyers, employees, transportation agencies, and the municipalities involved.

Producers

The producer of the products, whether he be a farmer, processor, or any one of a number who add value to the product in the marketing channel, would benefit from an improved and efficient wholesale food distribution facility in Chicago. Improvements in the operation of the various price-reflecting and price-making forces would result. Elimination of the inefficient features of the present market would tend to pass some of the savings back to the producer in the form of higher prices. A distribution center where many wholesalers operate provides a place where competition is keen and provides insurance for the producer that the best possible prices are obtained for his products.

Wholesale Operators

Individual operators would be able to conduct their business in fewer hours per day. Products could be loaded or unloaded at any time, and thus no regulation of unloading or loading hours would be necessary. Operators would also benefit directly from improved working conditions, adequate parking space, and general improvement in the environment. By improving the facilities, the wholesalers improve their competitive position, especially in respect to the large-volume operators, many of whom have already constructed and relocated their distribution facilities.

Consumers

No single group will benefit as greatly from improved marketing facilities for food as the consumers served by them.

TABLE 30.--Estimated annual rentals per square foot of floor space required for a private corporation or an authority to finance and operate the proposed wholesale food distribution facilities at 4 sites, Chicago, 1965

Commodity and type of floor space	Floor Space	Calumet Harbor		Lemont		Midway		O'Hare	
		Private	Authority	Private	Authority	Private	Authority	Private	Authority
Fruits and vegetables:	Sq. ft.	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Multiple-occupancy:									
First floor.....	747,500	3.15	2.25	2.45	1.80	3.60	2.50	2.75	2.05
Mezzanine.....	104,650	1.10	.80	.85	.65	1.25	.90	.95	.70
Single-occupancy.....	40,000	2.75	1.95	2.10	1.55	3.10	2.20	2.40	1.75
Total or average...	892,150	2.89	2.07	2.25	1.65	3.30	2.30	2.52	1.88
Meat and meat products:									
Multiple-occupancy:									
First floor.....	907,500	3.35	2.40	2.55	1.95	3.80	2.70	2.90	2.15
Second floor.....	653,400	1.30	.95	1.00	.80	1.50	1.05	1.15	.85
Total or average...	1,560,900	2.49	1.78	1.90	1.47	2.85	2.00	2.16	1.60
Poultry:									
Multiple-occupancy:									
First floor.....	60,000	2.85	2.00	2.20	1.60	3.25	2.25	2.50	1.80
Mezzanine.....	8,400	1.10	.80	.85	.65	1.25	.85	.95	.75
Total or average...	68,400	2.63	1.85	2.03	1.48	3.00	2.08	2.31	1.67
Butter, eggs, and cheese:									
Multiple-occupancy:									
First floor.....	160,000	2.90	2.10	2.25	1.70	3.30	2.35	2.50	1.85
Mezzanine.....	22,400	1.15	.85	.90	.70	1.30	.90	1.00	.80
Total or average...	182,400	2.69	1.95	2.08	1.58	3.05	2.17	2.31	1.72
Frozen foods:									
Limited purpose.....	194,250	5.25	3.75	4.05	3.00	5.95	4.15	4.60	3.35
Grocery products:									
Multiple-occupancy:									
First floor.....	455,000	3.00	2.15	2.30	1.75	3.40	2.40	2.60	1.90
Mezzanine.....	77,350	1.00	.70	.80	.60	1.15	.80	.90	.70
Single-occupancy.....	688,000	2.55	1.80	1.95	1.50	2.90	2.00	2.20	1.60
Total or average...	1,220,350	2.60	1.86	2.00	1.53	2.97	2.07	2.26	1.65
Fishery products:									
Multiple-occupancy:									
First floor.....	42,500	2.85	2.00	2.20	1.60	3.25	2.25	2.50	1.80
Mezzanine.....	5,950	1.10	.80	.85	.65	1.25	.85	.95	.75
Total or average...	48,450	2.64	1.86	2.02	1.49	2.99	2.08	2.31	1.65
All commodities:									
Multiple-occupancy:									
First floor.....	2,372,500	3.17	2.27	2.44	1.83	3.60	2.54	2.75	2.03
Second floor.....	872,150	1.25	.92	.97	.74	1.43	1.02	1.10	.79
Single-occupancy.....	922,250	3.13	2.22	2.40	1.82	3.55	2.46	2.72	1.98
Total or average...	4,166,900	2.75	1.96	2.12	1.59	3.13	2.20	2.40	1.76
Revenue yield from suggested rental rates....	--	1,000 dollars 11,459	1,000 dollars 8,167	1,000 dollars 8,833	1,000 dollars 6,625	1,000 dollars 13,042	1,000 dollars 9,167	1,000 dollars 10,000	1,000 dollars 7,334
Total revenue required...	--	11,423	8,049	8,749	6,523	12,933	9,090	9,932	7,275
Excess of revenue yield over revenue required..	--	36	118	84	102	109	77	68	59

From improved facilities, properly operated, they can obtain a wide variety of foods of good quality. Many of the unsanitary, poorly refrigerated facilities, which cause quality deterioration, would be eliminated. Some of the savings could be reflected in lower prices that consumers must pay for their food.

Buyers

In the proposed food distribution center, buyers would be able to arrive at the market, park conveniently, make their selections, load their trucks expeditiously, and leave without any unnecessary delay. Examination and selection of products would be much easier because of design and location of storage and display areas, and better lighting. Buyers not wishing to come into the market to make their purchases could be served by more efficient telephone arrangements and receive the benefits of an efficient market through more rapid order assembly and delivery.

Employees

Working conditions for employees would be improved in a new market. The worker's job would be less arduous because the buildings are designed for efficient handling; as a result, productivity should increase, which over a period of time usually results in increased wages. Regular hours of work could be arranged and large amounts of overtime and irregular employment should not be necessary. The general environment for work would be improved, and conveniences such as employee parking, restaurants, and welfare facilities, which are now lacking or inadequate, could be provided.

Transportation Agencies

Railroads have long been at a disadvantage in the present market because they cannot place cars where products can be transferred directly into many operators' places of business. The effects of this have been lessened somewhat by the use of containerized equipment carried on flatcars, but total replacement of rail cars is not likely in the foreseeable future. In the present market areas most cars must be unloaded at team tracks some distance away from the markets. The costs of transporting the products from team tracks to the markets are borne by the receivers, whereas truck shipments go directly to the market without such charges. Furthermore, the extra handling involved in the movement from team tracks to operators' places of business increases the time required to receive rail shipments.

In the proposed facilities, direct rail access is provided every operator, as both rail and truck transport are very important in supplying the food needs of large cities.

Motor vehicle operators would benefit from the construction of improved facilities at all sites because of the reduction in traffic congestion and the ready availability of parking and service areas. The time required to deliver a load of product to the market would be reduced substantially.

The Municipality

Regardless of who builds and constructs a new market, the municipality involved will benefit in several ways. If the present market areas are redeveloped, an increase in the tax base of the city will almost surely develop. The only exception would be in case the city redevelops the existing market areas into tax exempt properties, and even then the city would benefit, as the old markets would provide space for the new facilities. The development of an improved wholesale market would also increase the tax base for this industry if it is constructed within the city limits.

The municipality, in addition to changes in taxation, would benefit from (1) an increased volume of business, (2) the elimination of traffic congestion in major areas of the city, (3) improvements in enforcing sanitary, fire, and police regulations, and (4) increased economic development in the city.

Measurable Savings

Cost reductions in this section are calculated only on that volume of food products handled by operators that would be expected to relocate in a new wholesale food distribution center. Estimated savings are presented in the same sequence as the movement of products into, through, and out of the market. These handling and operating costs are based upon the types and arrangements of facilities as previously discussed, and the assumption is made that the proper kinds and amounts of handling equipment will be used. Furthermore,

the savings are based on rentals resulting from financing and operation by a public agency that would make payments in lieu of taxes equal to 50 percent of that which would be paid by a private corporation. Benefits by other methods of financing and operation should be weighed against the increased rentals that would be necessary.

In the cost comparisons that follow, facility services include the cost of security, market assessments for various services, and costs of refrigeration in the present markets. In the proposed markets some of these costs are totally eliminated and others are carried under other items. For instance, the market assessments in South Water Market included the maintenance of canopies over the platforms, but in the proposed facilities all maintenance of the facilities is included in the rental paid.

Refrigeration equipment cost in the present facilities is not included except where the equipment is a part of the facility and is included as a part of the rental. Where a community system is used, these costs are reflected in facility services, and the charges assessed for refrigeration no doubt cover the cost of equipment. In the proposed facilities, refrigeration equipment is included only in the rentals of the frozen food facilities. The costs of operation for all refrigeration are estimated and included in the facility services. The comparisons that follow reflect these variations and would reduce the annual savings possible only to the extent of the annual cost of refrigeration equipment. Much of the equipment currently in use could be used in the proposed facilities.

Details of costs for each commodity are presented at the end of this section in tables 31 - 36. Table 37 is a summary of costs for all commodities.

Fruits and Vegetables

Most of the costs of getting products to the market could be saved by relocating the major wholesale fruit and vegetable markets in the city. Primary savings would result from reduced cartage in moving products from team tracks, as the major part of this movement would be eliminated by placing house tracks beside each of the buildings. Cartage could not be totally eliminated because of the volume of product moving through the auctions, but even the cost of this movement could be reduced considerably. In a properly designed market, all of the delay due to traffic congestion, narrow streets, and improper loading and unloading docks would be eliminated.

To move the 992,798 tons of fruits and vegetables from the first point of arrival to the present markets costs an estimated $1,850,000, or an average of $1.86 per ton. In new facilities these costs could be reduced to $232,000 annually, or $0.23 per ton. Cost reductions at all sites would be similar because the volume of fruits and vegetables arriving by air and by water is negligible at the present time. Movements by these means will probably increase in the future, but it is doubtful that they will constitute a major method.

Savings that are possible within the facilities are quite significant because of better flow, improved loading and unloading arrangements, and better space utilization. The costs of rentals and equipment usage will increase on all sites. Rentals vary according to the site being considered. These increases are more than offset by more efficient loading, unloading, order assembly, transfer of product between operators, and handling. The total volume expected to be handled in improved facilities is 1,080,810 tons annually. This includes the product that must be double-handled in order to market the products to their best advantage. Total annual savings in handling are estimated at $321,000 at Calumet, $591,000 at Lemont, $113,000 at Midway, and $460,000 at O'Hare. Detailed breakdowns by cost items are shown in table 31 at the end of this section.

The costs of distributing the products from each of the sites vary according to the distances involved. The costs of distributing at all sites except Lemont would be less than the cost in present facilities. It would cost about $478,000 more to distribute the products from Lemont and $127,000, $271,000, and $45,000 less from Calumet, Midway, and O'Hare, respectively.

The total estimated net savings for marketing the 992,798 tons of direct receipts of fruits and vegetables that are proposed to be relocated are $2,066,000, $1,731,000, $2,002,000, and $2,123,000 annually at the Calumet, Lemont, Midway, and O'Hare sites, respectively.

Meat and Meat Products

In improved facilities the total costs of avoidable delay in getting meat and meat products into and away from the markets would be saved at all sites and would amount

to an estimated $379,000 annually. Cartage costs involved in getting the products to the various facilities used in marketing meat are negligible because most of the product arriving in the city comes by truck from local or nearby processors and slaughterers. The inefficiencies of the present facilities are especially evident in the meat segment of the food industry, and the savings from improved facilities would be dramatic.

All the costs of handling within the facilities would be reduced except equipment usage, which would rise slightly. Annual net savings of $17,666,000, $18,201,000, $17,330,000, and $17,988,000 are estimated for the Calumet, Lemont, Midway, and O'Hare sites, respectively.

Costs of distribution would be greater than in the present facilities at all sites; increases would range from $20,000 to $1,487,000 annually, depending upon the specific site. These increased distribution costs are more than offset by more efficient operations within the facilities.

In improved facilities, tremendous savings would be possible because of less waste, shrinkage, theft, and product deterioration, reduced facility services, and less overtime for inspection services, loading, unloading, interior preparation, assembly of orders, and handling. In addition, the costs of transfer between operators would be reduced to the minimum required for efficient marketing.

The average per-ton costs for handling meat and meat products could be reduced from an estimated $47.94 in present markets to $32.22, $32.90, $32.37, and $32.22 at Calumet, Lemont, Midway and O'Hare, respectively. Detailed breakdowns of all the selected costs and the savings are shown in table 32 at the end of this section.

Poultry

Since almost all of the poultry, like meat, comes directly to the wholesalers, little cost is involved in getting the products to the facilities from the first point of arrival. Only a few cars of poultry are at present unloaded at team tracks and transported by truck to the markets. Because all operators would have house tracks in the proposed facilities at any of the sites, this cost of approximately $3,000 annually would be saved in a new market.

About one-third of a million dollars annually could be saved in the handling of poultry within improved facilities. The estimated savings from improved facilities at Calumet are $313,000, at Lemont $339,000, at Midway $298,000, and at O'Hare $326,000. Slight increases in the costs of handling equipment would result, but these would be more than offset by reductions in rentals, facility services (which include security, operating costs for refrigeration, and traffic control), handling within the facilities, and loading and unloading costs.

In distributing the poultry from each of the four locations, saving would result in all but one, Lemont, and the additional cost there would be only about $6,000 annually.

The total annual savings in receiving, handling, and distributing the 77,974 tons of poultry in the Chicago area by operators who would benefit from or otherwise have need for improved facilities at Calumet, Lemont, Midway, or O'Hare are $332,000, $336,000, $387,000, and $409,000, respectively.

A detailed breakdown of the various selected cost items and the savings possible at each site are shown in table 33 at the end of this section.

Butter, Eggs, and Cheese

Since the first point of arrival for butter, eggs, and cheese is the wholesale facilities of the dealers, no cartage or delay costs are involved in getting products to the dealers.

The major savings in handling these products in improved facilities are concentrated in the handling operations within the facilities. The total estimated costs of handling 216,722 tons of these products in present facilities are $1,256,000, or about $5.80 per ton. In improved facilities these costs could be reduced to $5.02, $4.71, $5.20, and $4.83 per ton at Calumet, Lemont, Midway, and O'Hare, respectively. Total annual savings in handling, which includes higher rentals, at the four sites in the order just listed are: $169,000, $236,000, $128,000, and $210,000.

The costs of distribution for butter, eggs, and cheese at each of the four sites would result in a net annual saving of $17,000 at Calumet, $23,000, $66,000, and $69,000 at Lemont, Midway, and O'Hare respectively.

The total annual savings for marketing butter, eggs, and cheese in the proposed facilities are $186,000 at Calumet, $259,000 at Lemont, $194,000 at Midway, and $279,000 at O'Hare.

A complete breakdown of the costs and savings possible for the volumes expected

to require improved facilities is shown in table 34 at the end of this section.

Frozen Food

The total costs of handling, distributing, and marketing frozen food would be greater at all the proposed sites than under present conditions. It would cost $161,000 more at Calumet, $48,000 more at Lemont, $160,000 more at Midway, and $16,000 more at O'Hare to handle the volume of product currently being marketed. The major cost increase is in rentals, as would be expected, due to the heavy investment required in insulation and refrigeration equipment.

A breakdown of the costs and savings can be seen in table 35 at the end of this section.

Grocery Products

Improved facilities for marketing groceries would result in savings at only one of the four sites--$37,000 a year at O'Hare.

It would cost $202,000, $236,000, and $314,000 more to operate in improved facilities at Calumet, Lemont, and Midway, respectively.

Table 36 shows the present costs and savings which are estimated for each cost item. It is in the series of tables at the end of this section.

Fishery Products

Savings are not calculated for fishery products; but, obviously, benefits would result from handling these products in improved facilities at each of the four locations.

Summary of Savings

It is estimated that 3,236,506 tons of food products, excluding fishery products, would be marketed through improved facilities. In present facilities the costs of getting these products from the first point of arrival to the operator's place of business were estimated at $2,149,000, or an average cost of 66 cents per ton. In the proposed facilities at all of the four sites the average cost per ton could be reduced to 7 cents, or a total cost of $232,000 annually. Total savings in getting the products to the markets are estimated at $1,917,000 annually. The major cost reductions result from fewer and shorter trips from team tracks to operators' stores and from eliminating delay in positioning trucks at unloading platforms.

The benefits and savings possible from improved facilities are more pronounced in handling products within the market. Improved flow of products, and proper height and size of platforms and assembly areas aid in the ease of movement of products. In addition to the above benefits, the ease of making sales from team tracks and transfers between operators contributes materially to the savings possible. Substantial reductions in the costs and amount of facility services are possible at all four sites.

The total cost of handling the 3,477,219 tons, which includes the handling of 240,713 tons of products between operators within the market and the transfer of 498,289 tons of products to wholesalers and national chains which are not included in the proposed facilities, is estimated at $63,676,000, or an average of $18.31 per ton. In improved facilities at Calumet these costs could be reduced to about $13.10 per ton, which would result in net savings of $18,122,000 annually. If the facilities were located at Lemont, these costs would be $12.69 per ton and would result in net savings of $19,562,000 annually. Similar costs and savings are $13.37 and $17,185,000 at Midway, and $12.86 and $18,965,000 at O'Hare. Costs of rentals and the cost of equipment in improved facilities will both increase substantially, but will be more than offset by improved efficiency in other areas, as reflected in the net savings and costs reductions indicated above.

Cost of distribution will increase at all sites except at Midway, which is the closest to the center of population. It will increase more at Lemont than at either Calumet or O'Hare, primarily because of the distance. The avoidable delay involved in getting products away from the market would be totally eliminated. The total estimated costs of distributing 2,738,217 tons of products from present facilities to retail and institutional outlets were $15,214,000 and are estimated to cost $70,000 more at Calumet, $2,463,000 more at Lemont, $306,000 more at O'Hare, and $577,000 less at Midway.

A breakdown of these costs is shown in table 37 at the end of this section.

The total annual net savings are estimated at $19,969,000 at Calumet, $19,016,000 at Lemont, $19,679,000 at Midway, and $20,576,000 at O'Hare. The maximum difference between savings at the various sites is about $1.5 million annually.

TABLE 31.--Estimated annual costs of moving fresh fruits and vegetables through the facilities of 135 independent dealers in the proposed wholesale food distribution center at 4 sites and the costs for 1962 in present markets in Chicago[1]

Cost item	Volume to be handled in proposed market	Present markets		Calumet Harbor			Lemont			Midway			O'Hare		
		Average cost per ton	Total cost	Average cost per ton	Total cost	Savings	Average cost per ton	Total cost	Savings	Average cost per ton	Total cost	Savings	Average cost per ton	Total cost	Savings
	Tons	Dollars	1,000 dollars	Dollars	1,000 dollars	1,000 Dollars	Dollars	1,000 Dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars
Moving products to markets:															
Cartage from:															
Team tracks and piers[2]	321,387	3.48	1,118	1.00	160	958	1.00	160	958	1.00	160	958	1.00	160	958
Other points	72,211	2.27	164	1.00	72	92	1.00	72	92	1.00	72	92	1.00	72	92
Avoidable delay	443,779	1.28	568	0	0	568	0	0	568	0	0	568	0	0	568
Total or average costs of getting products to market	[3] 992,798	1.86	1,850	.23	232	1,618	.23	232	1,618	.23	232	1,618	.23	232	1,618
Handling and other costs in the markets:															
Labor:															
Unloading at facilities	914,412	1.06	968	.80	732	236	.80	732	236	.80	732	236	.80	732	236
Handling within stores	1,038,899	.86	890	.75	779	111	.75	779	111	.75	779	111	.75	779	111
Loading out to buyers' trucks	914,412	1.41	1,288	1.15	1,052	236	1.15	1,052	236	1.15	1,052	236	1.15	1,052	236
Sales from team tracks	41,911	1.35	57	1.25	52	5	1.25	52	5	1.25	52	5	1.25	52	5
Intramarket sales	88,012	2.52	222	2.00	176	46	2.00	176	46	2.00	176	46	2.00	176	46
Equipment use	1,080,810	.01	10	.05	54	-44	.05	54	-44	.05	54	-44	.05	54	-44
Rentals or revenue required	1,038,899	.60	621	1.77	1,843	-1,222	1.42	1,476	-855	1.97	2,051	-1,430	1.61	1,675	-1,054
Facility services	1,038,899	.41	430	.21	220	210	.21	220	210	.21	220	210	.21	220	210
Waste, thefts, deterioration	1,038,899	1.18	1,228	.59	614	614	.59	614	614	.59	614	614	.59	614	614
Transfer costs:															
Food chains	110,299	4.50	496	4.00	441	55	4.50	496	0	4.00	441	55	4.15	458	38
Other wholesalers	84,142	5.88	495	5.00	421	74	5.50	463	32	5.00	421	74	5.15	433	62
Total or average cost of handling within facilities	[3] 1,080,810	6.20	6,705	5.91	6,384	321	5.66	6,114	591	6.10	6,592	113	5.78	6,245	460
Moving products away from market:															
To:															
Retail and other outlets in the city	522,998	2.82	1,477	3.31	1,731	-254	5.06	2,646	-1,169	3.43	1,794	-317	4.09	2,139	-662
All other points in study area	156,602	10.14	1,588	9.22	1,444	144	7.24	1,134	454	7.90	1,237	351	7.14	1,118	470
All points outside study area[4]	118,757	1.37	163	1.37	163	0	1.37	163	0	1.37	163	0	1.37	163	0
Avoidable delay to outbound trucks	710,655	.33	237	0	0	237	0	0	237	0	0	237	0	0	237
Total or average cost of moving products away from markets	[3] 798,357	4.34	3,465	4.18	3,338	127	4.94	3,943	-478	4.00	3,194	271	4.28	3,420	45
Total selected costs	992,798	12.11	12,020	10.03	9,954	2,066	10.36	10,289	1,731	10.00	10,018	2,002	9.97	9,897	2,123

[1] Based upon public financing at the 4 possible sites with a 50-percent payment in lieu of taxes.
[2] Savings calculated on the basis that this movement would be reduced by 50 percent in a new market.
[3] Totals are composite totals and are not necessarily sum totals.
[4] Cost of loading trucks destined for points outside the study area.

TABLE 32.--Estimated annual costs of moving meat and meat products through the facilities of 232 independent dealers in the proposed wholesale food distribution center at 4 sites and the costs for 1962 in present markets in Chicago[1]

Cost item	Volume to be handled in proposed market	Present markets		Calumet Harbor			Lemont			Midway			O'Hare		
		Average cost per ton	Total cost	Average cost per ton	Total cost	Savings	Average cost per ton	Total cost	Savings	Average cost per ton	Total cost	Savings	Average cost per ton	Total cost	Savings
	Tons	Dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars
Moving products to markets:															
Cartage from:															
Team tracks and piers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other points	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Avoidable delay	214,169	1.21	260	0	0	260	0	0	260	0	0	260	0	0	260
Total or average costs of getting products to market	[2]1,129,055	.23	260	0	0	260	0	0	260	0	0	260	0	0	260
Handling and other costs in the markets:															
Labor:															
Unloading at facilities	1,009,645	3.40	3,432	1.50	1,514	1,918	1.50	1,514	1,918	1.50	1,514	1,918	1.50	1,514	1,918
Handling within stores	1,247,151	12.43	15,499	10.00	12,472	3,027	10.00	12,472	3,027	10.00	12,472	3,027	10.00	12,472	3,027
Loading out to buyers' trucks	1,009,645	3.42	3,452	3.00	3,029	423	3.00	3,029	423	3.00	3,029	423	3.00	3,029	423
Sales from team tracks	23,435	3.58	84	0	0	84	0	0	84	0	0	84	0	0	84
Intramarket sales	141,531	4.72	668	4.50	637	31	4.50	637	31	4.50	637	31	4.50	637	31
Equipment use	1,270,586	.12	151	.15	191	-40	.15	191	-40	.15	191	-40	.15	191	-40
Rentals or revenue required	1,247,151	2.95	3,678	2.26	2,813	865	1.83	2,278	1,400	2.52	3,149	529	2.00	2,491	1,187
Facility services	1,247,151	5.56	6,932	1.50	1,871	5,061	1.50	1,871	5,061	1.50	1,871	5,061	1.50	1,871	5,061
Storage away from stores	1,247,151	.52	643	.25	312	331	.25	312	331	.25	312	331	.25	312	331
Waste, thefts, deterioration	1,270,586	8.00	10,164	4.00	5,082	5,082	4.00	5,082	5,082	4.00	5,082	5,082	4.00	5,082	5,082
Transfer costs:															
Food chains	76,945	10.02	771	8.00	616	155	8.00	616	155	8.00	616	155	8.00	616	155
Other wholesalers	222,338	9.28	2,063	6.00	1,334	729	6.00	1,334	729	6.00	1,334	729	6.00	1,334	729
Total or average cost of handling within facilities	[2]1,270,586	37.41	47,537	23.51	29,871	17,666	23.09	29,336	18,201	23.77	30,207	17,330	23.26	29,549	17,988
Moving products away from market:															
To:															
Retail and other outlets in the city	331,129	8.39	2,777	9.86	3,265	-488	15.06	4,987	-2,210	10.21	3,381	-604	12.15	4.023	-1,246
All other points in study area	119,360	17.67	2,109	16.07	1,918	191	12.61	1,505	604	13.77	1,644	465	12.45	1,486	623
All points outside study area[3]	379,283	3.48	1,320	3.48	1,320	0	3.48	1,320	0	3.48	1,320	0	3.48	1,320	0
Avoidable delay to outbound trucks	202,943	.59	119	0	0	119	0	0	119	0	0	119	0	0	119
Total or average cost of moving products away from markets	[2] 829,772	7.62	6,325	7.84	6,503	-178	9.41	7,812	-1,487	7.65	6,345	-20	8.23	6,829	-504
Total selected costs	1,129,055	47.94	54,122	32.22	36,374	17,748	32.90	37,148	16,974	32.37	36,552	17,570	32.22	36,378	17,744

[1] Based upon public financing at the 4 possible sites with a 50-percent payment in lieu of taxes.
[2] Totals are composite totals and are not necessarily sum totals.
[3] Cost of loading trucks destined for points outside the study area.

TABLE 33.--Estimated annual costs of moving poultry through the facilities of 25 independent dealers in the proposed wholesale food distribution center at 4 sites and the costs for 1962 in present markets in Chicago[1]

Cost item	Volume to be handled in proposed market	Present markets		Calumet Harbor			Lemont			Midway			O'Hare		
		Average cost per ton	Total cost	Average cost per ton	Total cost	Savings	Average cost per ton	Total cost	Savings	Average cost per ton	Total cost	Savings	Average cost per ton	Total cost	Savings
	Tons	Dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars
Moving products to markets:															
Cartage from:															
Team tracks and piers	920	3.26	3	0	0	3	0	0	3	0	0	3	0	0	3
Other points	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Avoidable delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total or average costs of getting products to market	[2] 77,974	.04	3	0	0	3	0	0	3	0	0	3	0	0	3
Handling and other costs in the markets:															
Labor:															
Unloading at facilities	77,785	1.75	136	1.00	78	58	1.00	78	58	1.00	78	58	1.00	78	58
Handling within stores	80,702	2.50	202	1.75	141	61	1.75	141	61	1.75	141	61	1.75	141	61
Loading out to buyers' trucks	77,785	2.10	163	1.75	136	27	1.75	136	27	1.75	136	27	1.75	136	27
Intramarket sales	2,728	4.03	11	3.30	9	2	3.30	9	2	3.30	9	2	3.30	9	2
Equipment use	80,702	.04	3	.05	4	-1	.05	4	-1	.05	4	-1	.05	4	-1
Rentals and revenue required	80,702	1.46	118	1.57	127	-9	1.25	101	17	1.76	142	-24	1.41	114	4
Facility services	80,702	3.01	243	1.50	121	122	1.50	121	122	1.50	121	122	1.50	121	122
Storage away from stores	80,702	.71	57	.30	24	33	.30	24	33	.30	24	33	.30	24	33
Waste, thefts, and deterioration	80,702	.50	40	.25	20	20	.25	20	20	.25	20	20	.25	20	20
Transfer costs:															
Food chains	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other wholesalers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total or average cost of handling within facilities	[2] 80,702	12.06	973	8.18	660	313	7.86	634	339	8.36	675	298	8.02	647	326
Moving products away from market:															
To:															
Retail and other outlets in the city	34,526	6.63	229	7.79	269	-40	11.90	411	-182	8.08	279	-50	9.60	331	-102
All other points in study area	25,635	24.03	616	21.85	560	56	17.16	440	176	18.72	480	136	16.93	434	182
All points outside study area[3]	17,813	1.85	33	1.85	33	0	1.85	33	0	1.85	33	0	1.85	33	0
Avoidable delay to outbound trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total or average cost of moving products away from markets	77,974	11.26	878	11.05	862	16	11.34	884	-6	10.16	792	86	10.23	798	80
Total selected costs	77,974	23.78	1,854	19.52	1,522	332	19.47	1,518	336	18.81	1,467	387	18.53	1,445	409

[1] Based upon public financing at the 4 possible sites with a 50-percent payment in lieu of taxes.
[2] Totals are composite totals and are not necessarily sum totals.
[3] Cost of loading trucks destined for points outside the study area.

TABLE 34.--Estimated annual costs of moving butter, eggs, and cheese through the facilities of 40 independent dealers in the proposed wholesale food distribution center at 4 sites and the costs for 1962 in present markets in Chicago[1]

Cost item	Volume to be handled in proposed market	Present markets		Calumet Harbor			Lemont			Midway			O'Hare		
		Average cost per ton	Total cost	Average cost per ton	Total cost	Savings	Average cost per ton	Total cost	Savings	Average cost per ton	Total cost	Savings	Average cost per ton	Total cost	Savings
	Tons	Dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars
Moving products to markets:															
Cartage from:															
Team tracks and piers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other points	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Avoidable delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total or average costs of getting products to markets	[2] 214,404	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Handling and other costs in the markets:															
Labor:															
Unloading at facilities	214,250	0.68	145	0.50	107	38	0.50	107	38	0.50	107	38	0.50	107	38
Handling within facilities	216,722	1.50	324	1.00	217	107	1.00	217	107	1.00	217	107	1.00	217	107
Loading out to buyers' trucks	214,250	.66	142	.50	107	35	.50	107	35	.50	107	35	.50	107	35
Intramarket sales	2,318	1.51	4	1.00	2	2	1.00	2	2	1.00	2	2	1.00	2	2
Equipment use	216,722	.01	2	.05	11	-9	.05	11	-9	.05	11	-9	.05	11	-9
Rentals or revenue required	216,722	.67	145	1.64	355	-210	1.33	288	-143	1.83	396	-251	1.45	314	-169
Facility services	216,722	1.65	358	1.00	217	141	1.00	217	141	1.00	217	141	1.00	217	141
Storage away from stores	216,722	.28	61	.15	32	29	.15	32	29	.15	32	29	.15	32	29
Waste, thefts, deterioration	216,722	.30	66	.15	33	33	.15	33	33	.15	33	33	.15	33	33
Transfer costs to:															
Food chains	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other wholesalers	1,137	7.95	9	5.00	6	3	5.00	6	3	5.00	6	3	5.00	6	3
Total or average cost of handling within facilities	[2] 216,722	5.80	1,256	5.02	1,087	169	4.71	1,020	236	5.20	1,128	128	4.83	1,046	210
Moving products away from market:															
To:															
Retail and other outlets in the city	43,670	2.75	120	3.23	141	-21	4.94	216	-96	3.35	146	-26	3.98	174	-54
All other points in study area	44,013	9.50	418	8.64	380	38	6.78	299	119	7.40	326	92	6.69	295	123
All points outside study area[3]	125,584	.66	83	.66	83	0	.66	83	0	.66	83	0	.66	83	0
Avoidable delay to outbound trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total or average cost of moving products away from markets	[2] 213,267	2.91	621	2.83	604	17	2.80	598	23	2.60	555	66	2.59	552	69
Total selected costs	214,404	8.75	1,877	7.89	1,691	186	7.55	1,618	259	7.85	1,683	194	7.45	1,598	279

[1] Based upon public financing at the 4 possible sites with a 50-percent payment in lieu of taxes.
[2] Totals are composite totals and are not necessarily sum totals.
[3] Cost of loading trucks destined for points outside the study area.

TABLE 35.--Estimated annual costs of moving frozen food through the facilities of 31 independent dealers in the proposed wholesale food distribution center at 4 sites and the costs for 1962 in present markets in Chicago[1]

Cost item	Volume to be handled in proposed market	Present markets		Calumet Harbor			Lemont			Midway			O'Hare		
		Average cost per ton	Total cost	Average cost per ton	Total cost	Savings	Average cost per ton	Total cost	Savings	Average cost per ton	Total cost	Savings	Average cost per ton	Total cost	Savings
	Tons	Dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars
Moving products to markets:															
Cartage from:															
Team tracks and piers															
Other points															
Avoidable delay															
Total or average costs of getting products to markets	[2] 79,340														
Handling and other costs in the markets:															
Labor:															
Unloading at facilities															
Handling within facilities															
Loading out to buyers' trucks															
Intramarket sales															
Equipment use	85,464	.1	1	.05	4	-3	.05	4	-3	.05	4	-3	.05	4	-3
Rentals or revenue required	85,464	1.77	151	8.51	728	-577	6.82	583	-432	9.43	806	-655	7.62	651	-500
Facility services															
Storage away from stores															
Waste, thefts, deterioration	85,464	.30	26	.1	13	13	.22	13	12	.15	13	12	.15	13	12
Transfer costs to:															
Food chains															
Other wholesalers	3,428	10.96	58	10.95	38	20	10.95	38	20	10.95	38	20	10.95	38	20
Total or average cost of handling within facilities	[2] 85,464	10.23	1,387	18.30	1,564	-177	16.60	1,419	-32	19.21	1,642	-255	17.40	1,487	-100
Moving products away from markets to:															
Retail and other outlets in the city	24,465	11.04	270	12.97	317	-47	19.81	485	-215	13.44	329	-59	15.99	391	-121
All other points in study area	26,163	26.56	695	24.15	632	63	18.96	496	199	20.69	541	154	18.71	490	205
All points outside study area[3]	25,284	2.76	70	2.76	70	0	2.76	70	0	2.76	70	0	2.76	70	0
Total or average cost of moving products away from markets	[2] 75,912	13.65	1,035	13.42	1,019	16	13.84	1,051	-16	12.32	940	95	12.53	951	84
Total selected costs	79,340	30.53	2,422	32.56	2,583	-161	31.13	2,470	-48	32.54	2,582	-160	30.72	2,438	-16

[1] Based upon public financing at the 4 possible sites with a [illegible]-percent payment in lieu of taxes.
[2] Totals are composite totals and are not necessarily sum totals.
[3] Cost of loading trucks destined for points outside the study area.

TABLE 36.--Estimated annual costs of moving grocery products through the facilities of 69 independent dealers in the proposed wholesale food distribution center at 4 sites and the costs for 1962 in present markets in Chicago[1]

Cost item	Volume to be handled in proposed market	Present markets		Calumet Harbor			Lemont			Midway			O'Hare		
		Average cost per ton	Total cost	Average cost per ton	Total cost	Savings	Average cost per ton	Total cost	Savings	Average cost per ton	Total cost	Savings	Average cost per ton	Total cost	Savings
	Tons	Dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars
Moving products to markets:															
Cartage from:															
Team tracks and piers	10,250	3.51	36	0	0	36	0	0	36	0	0	36	0	0	36
Other points	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Avoidable delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total or average costs of getting products to markets	[2] 742,935	.05	36	0	0	36	0	0	36	0	0	36	0	0	36
Handling and other costs in the markets:															
Labor:															
Unloading at facilities	742,935	.64	477	0.50	371	106	0.50	371	106	0.50	371	106	0.50	371	106
Handling within facilities	742,935	3.53	2,622	3.50	2,600	22	3.50	2,600	22	3.50	2,600	22	3.50	2,600	22
Loading out to buyers' trucks	742,935	.70	521	.70	521	0	.70	521	0	.70	521	0	.70	521	0
Equipment use	742,935	.05	37	.05	37	0	.05	37	0	.05	37	0	.05	37	0
Rentals or revenue required	742,935	1.47	1,090	3.06	2,273	-1,183	2.53	1,876	-786	3.41	2,532	-1,442	2.72	2,022	-932
Facility services	742,935	.48	354	0	0	354	0	0	354	0	0	354	0	0	354
Storage away from stores	742,935	.97	717	.25	186	531	.25	186	531	.25	186	531	.25	186	531
Waste, thefts, deterioration	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transfer costs to:															
Food chains	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other wholesalers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total or average cost of handling within facilities	[2] 742,935	7.83	5,818	8.06	5,988	-170	7.53	5,591	227	8.41	6,247	-429	7.72	5,737	81
Moving products away from market:															
To:															
Retail and other outlets in the city	259,625	4.51	1,172	5.30	1,376	-204	8.09	2,100	-928	5.49	1,425	-253	6.53	1,695	-523
All other points in study area	129,562	11.57	1,499	10.52	1,363	136	8.26	1,070	429	9.01	1,167	332	8.15	1,056	443
All points outside study area[3]	353,748	.62	219	.62	219	0	.62	219	0	.62	219	0	.62	219	0
Avoidable delay to outbound trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total or average cost of moving products away from markets	742.935	3.89	2,890	3.98	2,958	-68	4.56	3,389	-499	3.78	2,811	79	4.00	2,970	-80
Total selected costs	742,935	11.77	8,744	12.04	8,946	-202	12.09	8,980	-236	12.19	9,058	-314	11.72	8,707	37

[1] Based upon public financing at the 4 possible sites with a 50-percent payment in lieu of taxes.
[2] Totals are composite totals and are not necessarily sum totals.
[3] Cost of loading trucks destined for points outside the study area.

TABLE 37.--Summary of estimated annual costs of moving all commodities through the facilities of 32 independent dealers in the proposed wholesale food distribution center sites and the costs for the same in present markets in Chicago[1]

[Excluding fishery products]

Cost item	Volume to be handled in proposed market	Present markets		Calumet Harbor			Lemont			Midway			O'Hare		
		Average cost per ton	Total cost	Average cost per ton	Total cost	Savings	Average cost per ton	Total cost	Savings	Average cost per ton	Total cost	Savings	Average cost per ton	Total cost	Savings
	Tons	Dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars	Dollars	1,000 dollars	1,000 dollars
Moving products to markets:															
Cartage from:															
Team tracks and piers	332,557	3.48	1,157	0.48	160	997	0.48	160	997	0.48	160	997	0.48	160	997
Other points	72,211	2.27	164	1.00	72	92	1.00	72	92	1.00	72	92	1.00	72	92
Avoidable delay	65,448	1.26	828	0	0	828	0	0	828	0	0	828	0	0	828
Total or average costs of getting products to markets	[2]3,236,506	.66	2,149	.07	232	1,917	.07	232	1,917	.07	232	1,917	.07	232	1,917
Handling and other costs in the markets:															
Labor:															
Unloading at facilities	3,837,412	1.77	6,794	.97	2,455	2,419	.97	2,455	2,419	.97	2,455	2,419	.99	2,455	2,419
Handling within facilities	3,411,873	9.37	20,017	4.82	10,444	3,573	4.82	10,444	3,573	4.82	10,444	3,573	4.82	10,444	3,573
Loading out to buyers' trucks	3,035,412	1.91	5,792	1.66	5,036	756	1.66	5,036	756	1.66	5,036	756	1.66	5,036	756
Sales from team tracks	65,346	2.16	141	.80	52	89	.80	52	89	.80	52	89	.80	52	89
Intramarket sales	240,713	3.93	946	3.55	855	91	3.55	855	91	3.55	855	91	3.55	855	91
Equipment use	3,477,219	.06	204	.09	301	-97	.09	301	-97	.09	301	-97	.09	301	-97
Rentals or revenue required	3,411,873	1.70	5,803	2.38	8,139	-2,336	1.94	6,602	-799	2.66	9,076	-3,273	2.13	7,267	-1,464
Facility services	3,411,873	2.48	8,454	.76	2,600	5,854	.70	2,600	5,854	.76	2,600	5,854	.76	2,600	5,854
Storage away from stores	3,411,873	.45	1,530	.16	554	976	.16	554	976	.16	554	976	.16	554	976
Waste, thefts, deterioration	3,477,219	3.31	11,523	1.66	5,762	5,761	1.66	5,762	5,761	1.66	5,762	5,761	1.66	5,762	5,761
Transfer costs to:															
Food chains	187,244	6.77	1,267	5.65	1,057	210	5.94	1,112	155	5.65	1,057	210	5.74	1,074	193
Other wholesalers	311,045	8.44	2,625	5.78	1,799	826	5.92	1,841	784	5.78	1,799	826	5.82	1,811	814
Total or average cost of handling within facilities	[2] 3,477,219	18.31	63,676	13.10	45,554	18,122	12.69	44,114	19,562	13.37	46,491	17,185	12.86	44,711	18,965
Moving products away from market:															
To:															
Retail and other outlets in the city	1,216,413	4.97	6,045	5.84	7,099	-1,054	8.92	10,845	-4,800	6.05	7,354	-1,309	7.20	8,753	-2,708
All other points in study area	501,335	13.81	6,925	12.56	6,297	628	9.86	4,944	1,981	10.76	5,395	1,530	9.73	4,879	2,046
All points outside study area[3]	1,020,469	1.85	1,888	1.85	1,888	0	1.85	1,888	0	1.85	1,888	0	1.85	1,888	0
Avoidable delay to outbound trucks	913,598	.39	356	0	0	356	0	0	356	0	0	356	0	0	356
Total or average cost of moving products away from markets	[2]2,738,217	5.56	15,214	5.58	15,284	-70	6.46	17,677	-2,463	5.35	14,637	577	5.67	15,520	-306
Total selected costs	3,236,506	25.04	81,039	18.87	61,070	19,969	19.16	62,023	19,016	18.96	61,360	19,679	18.68	60,463	20,576

[1] Based upon public financing at the 4 possible sites with a 50-percent payment in lieu of taxes.
[2] Totals are composite totals and are not necessarily sum totals.
[3] Cost of loading trucks destined for points outside the study area.

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